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ANNUAL REPORTS

OF THE

WAR DEPARTMENT

FOR THE

FISCAL YEAR ENDED JUNE 30, 1903.

VOLUME IV.

MILITARY SCHOOLS AND COLLEGES; RECORD AND PENSION OFFICE;
MILITARY PARKS, AND SOLDIERS' HOMES.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1903.

**ARRANGEMENT OF THE ANNUAL REPORTS OF THE WAR DEPARTMENT
FOR THE YEAR ENDED JUNE 30, 1903.**

Volume I.—Secretary of War:

Chief of Staff.
Adjutant-General.
Inspector-General.
Judge-Advocate-General.

Volume II.—Armament, Transportation and Supply:

Quartermaster-General.
Commissary-General.
Surgeon-General.
Paymaster-General.
Chief of Engineers, Military Affairs.
Chief of Ordnance.
Chief Signal Officer.
Chief of Artillery.
Board of Ordnance and Fortification.

Volume III.—Department and Division Commanders:

Department of California.
Department of the Colorado.
Department of the Columbia.
Department of Dakota.
Department of the East.
Department of the Lakes.
Department of the Missouri.
Department of Texas.
Division of the Philippines—
1. Department of Luzon.
2. Department of the Visayas.
3. Department of Mindanao.

**Volume IV.—Military Schools and Colleges; Record and Pension Office;
Military Parks, and Soldiers' Homes:**

Military Academy—
1. Board of Visitors.
2. Superintendent.
Army War College.
General Service and Staff College.
School of Application for Cavalry and Field Artillery.
Artillery School.
School of Submarine Defense.
Chief of Record and Pension Office.
Commissioners of National Military Parks—
1. Chickamauga and Chattanooga.
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**REPORT OF THE BOARD OF VISITORS TO THE
UNITED STATES MILITARY ACADEMY.**

REPORT OF THE BOARD OF VISITORS TO THE UNITED STATES MILITARY ACADEMY.

WEST POINT, N. Y., *June 11, 1903.*

SIR: The Board of Visitors appointed by law under sections 1327, 1328, and 1329, Revised Statutes of the United States, to "inquire into the actual state of discipline, instruction, police administration, fiscal affairs, and other concerns of the institution, and to report the same to the Secretary of War for the information of Congress," has the honor to respectfully submit the following report:

The board met at West Point Hotel, West Point, N. Y., on Monday, June 1, all the members being present with one exception, and organized by the election of the Hon. David B. Henderson as president, Hon. A. O. Bacon as vice-president, and Hon. Joseph G. Darlington as secretary.

Immediately upon being advised of the organization of the board, the Superintendent of the United States Military Academy, Col. A. L. Mills, communicated with the board, by writing, under date of June 1, that he would be happy to afford the board every facility for a thorough inspection of all departments of the institution, administrative as well as academic, and, in general, to do everything possible to assist the board in its work.

Upon receipt of the letter of the Superintendent the board adjourned to meet at 4 o'clock, when it reconvened for the purpose of receiving the visit of the Superintendent, who was accompanied by the academic and military staff, and after personally introducing each officer to the board invited the members to the parade ground to witness the review of the cadets in honor of the board, which was a brilliant and soldierly exhibition of the highest order of military efficiency. At the close of the review the board attended the reception of Colonel and Mrs. Mills at the residence of the Superintendent, where they met the officers of the post and the first class of cadets.

The second meeting of the board was held on Tuesday, June 2, at which time the president announced the following committees:

Fiscal affairs.—Hon. A. O. Bacon, Hon. Russell A. Alger, Hon. George W. Baxter.

Water supply.—Hon. J. A. T. Hull, Hon. Joseph G. Darlington, Hon. D. A. De Armond, Hon. A. O. Bacon, Col. William A. Pew, jr.

Instruction, discipline, athletics, and examinations.—Col. Asbury Coward, Rev. Ernest M. Stires, Col. William A. Pew, jr.

Increase of plant, on buildings, grounds, and hygiene.—Hon. J. G. Schmidlapp, Hon. George W. Steele, Hon. J. A. T. Hull.

Armament and equipment.—Hon. George W. Baxter, Hon. George W. Steele, Col. Asbury Coward.

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The wisdom of dividing the labor of the board is fully demonstrated by the complete reports of the several committees herewith annexed, which give in detail valuable information regarding the several matters specially referred to them, and which this board is directed to investigate and report.

The report of each committee has been carefully considered by the board. The reports of the committee on water supply, on instruction, discipline, athletics, and examinations, and on increase of plant, on buildings, grounds, and hygiene were unanimously approved. The reports of the committee on fiscal affairs and on armament and equipment were ordered to be incorporated with the report of the board.

FACILITY FOR INVESTIGATION.

Every facility was afforded the board for a thorough inspection of all the departments of the institution, administrative and academic, and everything was done by the superintendent and the members of the academic and military staff to assist the board in their investigations.

FISCAL AFFAIRS.

The board is greatly impressed with the thorough business methods adopted and in force regarding the accounts of the post as they relate to general affairs, and to the accounts with the cadets. Every reasonable safeguard is used to prevent errors, and the system adopted gives evidence of an intelligent understanding of the requirements to protect the interests of the Government and, at the same time, afford every facility to the cadets for securing their requisitions without cumbersome or annoying regulations.

The committee did not find anything to criticise in the method of keeping the accounts; on the contrary, the system and method appear to be all that could be desired, either by the Government or by the cadets.

The allowance now made by Congress to meet the expenses of a cadet is liberal and generous, but does not permit the accumulation of a reserve fund sufficiently large to provide the necessary equipment for a cadet upon his graduation. This deficiency could be overcome by charging against the general expense account for the maintenance of the buildings the cost for policing the barracks and the gas consumed by the cadets in their rooms, which items are now charged against the personal account of each cadet, and the board recommends that this should be authorized, with the understanding that the amount involved which would accrue to the personal credit of each cadet shall be withheld from the total of his monthly credit and added to his personal reserve account, which, it is believed, will provide a sufficient amount to meet the cost of his equipment upon graduation.

WATER SUPPLY.

The board has given the most earnest and careful consideration to the question regarding an adequate supply of water for the post, recognizing that this is a matter of such importance that every provision should be made, not only for the present necessities, but with a

view to provide for any contingencies in the future. The report of the committee on this subject is very thorough and furnishes in detail the result of its investigation, and the board respectfully submits that it should receive immediate consideration in order to secure prompt action on the part of Congress.

The health of all connected with the post is largely dependent upon an abundant supply of pure water, and if the suggestion by the committee, which received the unanimous approval of the board, be adopted, there is every reason to believe that the question of a sufficient supply of water for the post will be finally determined.

INSTRUCTION, DISCIPLINE, ATHLETICS, AND EXAMINATIONS.

The very excellent report of the committee on these several branches is so thorough and complete that it is only necessary to state that it met with the unanimous approval of the board.

Particular attention is invited to the section in the report relating to discipline.

It affords the board very great pleasure to state that the practice of ill-treating new cadets, commonly known as "hazing," appears to have been effectually and entirely eliminated from the corps of cadets, and, in the words of the committee, "this fact is all the more gratifying because, having been brought about by spontaneity of action of the cadets themselves rather than by coercive measures of the academic officers, gives assurance of perpetuity."

INCREASE OF PLANT, BUILDINGS, GROUNDS, AND HYGIENE.

The question of an increase of plant and buildings having been determined by the Congress, there was nothing for the board to do in this connection.

The board invites special attention to the communication from the superintendent under date of June 9, suggesting certain changes and alterations in the cadet hospital, which meets the unanimous approval of the board.

ARMAMENT AND EQUIPMENT.

The armament and equipment of the post appear to be all that is necessary. The suggestion regarding a model seacoast battery at West Point does not appeal to the judgment of the board, for the reason that it would involve a large expenditure of money, and, further, that the batteries at Sandy Hook are easy of access. The board heartily approves the wisdom of taking the cadets of the senior class to Sandy Hook for the purpose of receiving practical instruction as frequently during the year as in the judgment of the Superintendent and instructors may be necessary. The cost of doing this should be borne by the Government.

LIBRARY.

This important department is most interesting, and contains a large number of very valuable books, manuscripts, maps, autograph letters, etc., affording great assistance to the officers and cadets. It lacks many essentials for a completely equipped military library, and there

is a necessity for additional books and maps upon the art of war and military instruction. It is especially important that the officers and cadets should have access to all reliable maps and publications relating particularly to our recently acquired possessions. The librarian, Prof. Edward S. Holden, is most enthusiastic in his efforts to increase the value and attractiveness of the library, and his efforts are deserving of the most earnest support and encouragement.

ADDITIONAL RECOMMENDATIONS.

The board calls particular attention to the condition of Fort Putnam, and recommends that a further investigation be made, if necessary, as to what is required for the preservation of this historic ruin, which will soon entirely disappear if measures are not promptly taken to protect it from demolition.

The recommendation of the Superintendent that an edition of 6,000 copies of the jubilee volume of the centennial history of the Academy should be printed at the Government Printing Office for distribution and exchange is unanimously approved by the board.

West Point is becoming more important each year, and is recognized, at home and abroad, as the greatest center of military education in the world, thereby attracting an increasing number of distinguished visitors each year, which entails upon the Superintendent a largely increased expenditure, to meet which there should be a corresponding increase in the allowance of the Superintendent for contingencies. The board unanimously recommends that the necessary increase should be authorized.

West Point recalls the most precious associations of the commencement of our national history, and should arouse intense patriotism in the heart of every true American.

The United States Military Academy is the pride of the nation, and richly deserves the most considerate and generous recognition from the American people.

It is confidently believed that the Congress will be as liberal in the future as it has been in the past in providing for its maintenance upon the very highest plane of usefulness. No observing and thoughtful man can visit the post without being deeply impressed with its wonderfully beautiful location and surroundings.

To witness the corps at study, at recitation, and upon parade is an inspiration.

It is doubtful if ever in the history of the Academy was the instruction so thorough, the discipline so perfect, and the scope of usefulness so extended as at this time.

The United States Military Academy at West Point is recognized at home and abroad as the highest and best equipped military institution in the world.

No greater honor can come to an American boy than to be worthy of its diploma, which certifies to his manliness, to his ability as a student, to his attainments in the art of war and military science.

With the diploma of the United States Military Academy in his possession the graduate leaves the post a thoroughly equipped American gentleman, prepared to take his position in the world and to maintain under every condition the honor of his country.

In concluding this report the board desires to place upon record their appreciation of the valuable assistance rendered during their investigation and examination by the Superintendent of the post, Col. A. L. Mills, and the members of the academic and military staff.

Respectfully submitted.

D. B. HENDERSON,
President of the Board.

AUGUSTUS O. BACON,
Vice-President.

JOS. G. DARLINGTON,
Secretary.

GEO. W. BAXTER.

ASBURY COWARD.

WILLIAM A. PEW, JR.

ERNEST M. STIRES.

J. G. SCHMIDLAPP.

RUSSELL A. ALGER.

J. A. T. HULL.

GEO. W. STEELE.

DAVID A. DE ARMOND.

The SECRETARY OF WAR,
Washington, D. C.

COMMITTEE REPORTS.

REPORT OF THE COMMITTEE ON FISCAL AFFAIRS.

WEST POINT, N. Y., *June 8, 1903.*

SIR: The committee on fiscal affairs respectfully submit the following:

During the week which has elapsed since the convening of the Board of Visitors your committee have made a careful examination into the fiscal affairs of the Military Academy, and in so doing have received the most cordial and active assistance from the Superintendent, the commandant of cadets, and the treasurer of the institution, as well as from all other officers from whom information was sought.

The scope of the inquiry devolving upon your committee is wide, involving as it does the purchase and disposition of supplies for the maintenance of the post, and in addition thereto all expenditures for allowances of officers, pay of cadets, and wages to employees requisite for securing to the Academy the highest state of efficiency.

The impracticability of an examination with minute detail of the many books and voluminous accounts of the treasurer, and of taking an inventory of the large stock of goods and material on hand, will be readily recognized. The inability to make this detailed examination is of less consequence because of the fact that all the books and accounts of the treasurer are periodically subjected to a most thorough examination by a board of competent officers of the post. Your committee made a general inspection of the books and accounts, and in all particulars found them most neatly and carefully kept. This examination, and the periodical auditing of the accounts, justify your committee in the expression of their entire confidence in their accuracy.

An inspection was made by the committee of the various departments the nature of which properly classified them within the scope of their work, and particularly of the cadet store, the cadet mess hall and kitchen, the quarters of the cadets, and the laundry. Each of these was found to be in a most satisfactory condition, and in a general way the same may be properly said of the equipment of each.

Without disparaging in any degree the other departments, your committee is gratified, on account of their importance and excellence, to specify with particularity the cadet kitchen and cadet mess hall, where everything was found to be of the best and scrupulously neat and clean. The members of the committee, without notification in advance of their intention, visited the mess hall at the dinner hour and dined with the cadets. The food found at this meal was plain, but substantial and nutritious and in abundant quantity. The cooking was of the very best character, and the linen and table service of every kind a model of neatness and cleanliness.

While not strictly within the legitimate scope of this report, the committee take occasion to note here their gratification in marking the good order, ease, and cheerfulness of the cadets while at the dinner table and their entire propriety of demeanor in entering and leaving the mess hall.

After an inspection of a majority of these departments the committee invited the treasurer and captain-quartermaster to furnish a written memorandum which would suggest to the committee the most important points connected with the operation of his department, to be noted in their report. This memorandum has now been furnished by the treasurer, Captain Franklin, and the committee find it to be such an admirable statement of the methods and operations of the fiscal department and so full of information valuable to Congress and to the public that they herewith incorporate the whole of it in their report as a part thereof. It is as follows:

Memorandum for the information of the Board of Visitors, 1903.

OFFICE OF THE TREASURER UNITED STATES MILITARY ACADEMY,
QUARTERMASTER AND COMMISSARY OF CADETS,
West Point, N. Y., June 5, 1903.

The departments which are under the charge of the officer who is detailed as treasurer of the Military Academy and quartermaster and commissary of cadets are: The treasurer's office United States Military Academy; the cadet mess, the cadet store, the cadet laundry.

TREASURER.

The treasurer has in his charge all moneys belonging to cadets arising from their deposits and pay.

As the first complete outfit of clothing, bedding, etc., issued to a new cadet amounts to about \$150, and since it will take many months for the savings from his monthly pay over his necessary current expenses to pay for the same, he is required to deposit, on entering, the sum of \$100, which sum is placed to his credit on his account.

The pay of a cadet is \$500 per annum and 30 cents per day commutation of rations, and out of this sum he pays for his subsistence, bedding, clothing, shoes, text-books, stationery, stamps, washing, and, in short, everything that enters into his personal support at the Academy except fuel and quarters and medical supplies.

Cadets and candidates upon reporting at the Academy are required to deposit with the treasurer any and all moneys in their possession. Any candidate who does not pass his examination has his money refunded to him, less the cost of his board at the cadet's mess during his stay at the Academy and any charge for loss of or damage to furniture issued to him for his use pending his examination.

The treasurer opens an account with each cadet, the same as a bank does with a depositor, crediting him with his deposit, and each month, with his pay, and charging him with all sums expended on his account that has the approval and authority of the Superintendent. Every two months the cadets' account books are settled, showing to each cadet the state of his account with the treasurer, and a statement in detail of receipts and disbursements on his account during the two months.

Each month each and every cadet signs the muster and pay roll, which, after examination by the treasurer to assure its being correct, is forwarded to the proper paymaster, United States Army, for payment. Payment consists in depositing the net amount on the rolls with the assistant treasurer United States, New York, N. Y., to the credit of the treasurer United States Military Academy.

The books necessarily kept by the treasurer consist of a ledger, statement book, day book, cash book, authority (to contract indebtedness) book, and check book.

Ledger accounts are kept as follows: Assistant treasurer, athletic association, balances paid, barber, cadet (petty) cash, cadet hospital, cadet laundry, cadet store, cadet mess, confectioner, dentist, deposits, equipment fund, expressage, dialectic society, gas fund, hops and german, miscellaneous fund, miscellaneous items, oath, paymaster, periodicals, photographer, policing of barracks, Young Men's Christian Association, and "Corps of Cadets" as a body.

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In the statement book an account is kept with each individual cadet, which account is "settled" every two months; the total of all individual cadet accounts is carried, through the daybook, into the "Corps of Cadets" account in the ledger.

The treasurer's accounts are inspected every two months by an officer detailed by the Superintendent for the purpose; said inspecting officer making a report to the Superintendent of the result of his inspection.

The treasurer pays all accounts, after verification, for goods purchased for and services rendered to the various branches of the cadet supply departments, and all other accounts against cadets approved, authorized, or ordered by the Superintendent, charging the same to their respective accounts in the ledger; proper vouchers for all such accounts are kept on file in the office. He also collects all bills against officers and others for supplies and services furnished by the cadet laundry, store, and mess, crediting the same to the proper accounts in the ledger.

Such items as board, hospital, and policing of barracks, also gas and equipment fund, are charged pro rata to the individual members of the corps; other items are charged to the cadet according to what he has purchased or otherwise incurred liability for.

All express and freight packages received for cadets or sent away by them pass through the hands of the treasurer, a record of same being kept in the office.

When authorized by the Superintendent, the treasurer issues "authorities" to contract indebtedness for confectionery, dentistry, periodicals, photographs, etc., which "authorities" are paid when presented at the office properly accomplished.

Each year the treasurer pays to each member of the graduating class, by check, or cash or both, the amount found to be due him upon settlement of his account to include (except as to pay) the day of graduation; he also pays to members of the furlough class such amounts, based upon the state of each member's account with the treasurer, as may be authorized by the Superintendent; it is and part of his duty to pay to any cadet resigned, discharged, or dismissed the amount found to be due him on the day his connection with the Academy is severed; discharged cadets being entitled, besides regular pay, to actual cost of transportation to their homes at the time of entering the Academy.

Pay due to cadets resigned, discharged, dismissed, or absent on leave at time of muster is collected from the paymaster on separate accounts, which are subvouchers to the regular muster and pay rolls, and are paid in the same way.

Payments of small accounts authorized by the Superintendent are also made to cadets going on short leaves of absence, for reasons deemed proper by the Superintendent.

A cadet who is discharged from the Academy because of deficiency in his studies or for any other cause is entitled to the cost of railroad fare from West Point to the place of his residence at the time he was appointed a cadet; the amount of said fare is determined by the Superintendent of the Academy, and is paid by the quartermaster of the Academy, usually through the treasurer of the Academy, when a cadet's account is finally settled. A cadet who resigns, is dismissed, or suspended is not entitled to railroad fare.

When cadets have been found deficient and are ordered to their homes to await the action of the War Department in their cases, the treasurer of the Academy advances them a sum sufficient to transport them to their homes, provide them with a berth in sleeper, and for their subsistence en route; the sum so advanced is charged against their account and is deducted from such amount as may be due them on final settlement.

When the account of a cadet is finally settled a statement on a prepared blank is sent to him, showing all credits and charges since the date of the last settlement of his account book, together with a receipt for the remainder due him for him to sign and return to the treasurer; properly accomplished, a check on the assistant treasurer of the United States, New York, is returned by mail to the cadet.

Cadets who go on their regular furlough receive from the treasurer all that they may be out of debt on their accounts, and, in addition thereto, have advanced to them their pay to the 1st of August of the current year.

In addition to such pay and advanced amounts cadets receive, through the quartermaster and commissary of cadets, a suit of civilian clothing, which is charged against their August pay.

It is optional with cadets whether or not they receive such clothing; if they do not, they will not be allowed to receive, before going on furlough nor while on furlough, the money value thereof, the object being to provide cadets before starting on furlough with proper fitting custom clothing, made of the best material by a reputable tailor, at the most reasonable prices, which object is most satisfactorily obtained by placing all orders for furlough clothing with one firm.

CADET MESS.

The working of the cadet mess is under the direct personal management of the commissary of cadets.

All supplies are purchased in open market in large quantities and from first hands where possible, fruit and other perishable articles when required.

All supplies are received and cared for by a commissary-sergeant, United States Army, detailed for duty in this department. A return of provisions, furniture, etc., received, issued, and remaining on hand is made every two months. This return shows everything that has been received, from whom purchased, and cost thereof, everything expended, all sales to officers and others living at the post, sales of scrap food, soap grease, etc.

The period covered by a return is termed a "settlement," and covers the period embraced in two calendar months. Settlements occur at the end of February, April, June, August, October, and December. Thus there are six settlements per year.

The subvouchers for the return are: (1) The original invoices of supplies purchased; (2) daily issues of provisions at the cadets' mess; (3) daily issues of contingent property, etc.; (4) statement of sales (handed in daily to office)—the reverse side of this blank exhibits all stores received during the previous day to that on which it is handed in; (5) pay roll of employees.

When a return is made, a board of officers, denominated the "board of inspectors," consisting of the commandant of cadets, quartermaster of the Academy, and senior tactical officer, convenes according to Regulations, examines all vouchers, and determines the amount each cadet shall be charged for board for the two months.

The return and the proceedings of the board of inspectors (which become part of the return) is submitted to the Superintendent of the Academy for his action. The return having received the approval of the Superintendent, the treasurer settles all accounts by check on the assistant treasurer of the United States, New York (or cash), taking a receipt therefor on the face of the voucher showing the purchases.

All the clerical labor of the department is performed by a commissary-sergeant, who, in addition to the above-enumerated duties performed by him, has charge of all supplies except the fresh meats, milk, and other perishable supplies, which, necessarily, are kept in the refrigerator, which is in charge of the chief cook.

The chief cook, with 1 assistant cook, 1 kitchen man, 2 potato peelers, a fireman, and a floor man prepares and cooks all meats, vegetables, soups, and in fact everything except bread, pastry, coffee, and tea; he keeps the soup-stock boiler in constant operation, placing therein all suitable bones, scrap meats, unconsumed drippings, etc.; he renders all beef-kidney fat, the cracklings from which are deposited with the soap fat, while the rendered fat is placed in empty butter tubs and stored for use in cooking French fried potatoes and the many other articles which require to be fried in beef fat.

The rendered beef fat, being pure, can be used in a great variety of ways in cooking as a substitute for lard or butter.

A chief baker and 1 assistant bake all breads, cakes, and pies.

Besides the above-mentioned employees of the department, there are employed 1 steward, 1 head waiter, 1 linen keeper, 1 waiter to every 20 cadets, he attending to 2 tables of 10 cadets each, and the requisite number of scrub women.

The fresh meats are of the best grade of choice cuts obtainable in the market; all groceries, fruits, and vegetables are of the best quality in every case.

A menu, the result of a consultation between the commissary and the "chef," is made daily for dinner and supper the following day and for breakfast the second morning following. This plan affords the "chef" ample time to make his arrangements ahead, and to enable the commissary to vary the menu daily and to keep well informed as to expenditures. The commissary has no regular times for making inspections; he is liable to drop in at any time.

Visitors are admitted at stated times and into every part of the establishment. Thorough and complete cleanliness in every place, visible and invisible, is insisted upon.

The tea and coffee urns used are of the most modern pattern and of great capacity, and are under the immediate charge of the steward.

Two 40-tube Chamberland-Pasteur filters, connected with the post water supply, filter all water used by the cadets during their meals. The water, after being filtered, passes to a tank through which refrigerating coils pass; thus the water is thoroughly chilled and filtered.

The crockery used is the white American hotel china, which costs about the same as the best English earthen or stoneware.

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The food is served in three courses: First, soup; second, meats and vegetables; third, dessert. All food unconsumed in the hall is carried out and turned over to the chef, who disposes of it as in his judgment is best.

No employee has any perquisite outside of his wages and board. Liberal wages are paid, to the end that employees will have the interests of the department at heart, and by practicing economy insure the continuance of their position and wages. Said wages are as follows: Chief cook, \$75; assistant cook, \$35; first baker, \$60; assistant baker, \$30; fireman, \$25; scullion, \$25; peelers, \$17.50; steward, \$50; head waiter, \$50; waiters, \$22 each, and pantry girls, \$15 each; all monthly. All unmarried employees are furnished dormitories at the mess.

CADET STORE.

The cadet store under different forms and designations has existed from the foundation of the academy. The object of the department is to supply to cadets, at actual cost, every article required by them for their support at the academy excepting their subsistence and their medicines.

Prior to 1876 supplies were charged to cadets at a reasonable profit. The accumulation of profits so arising in a long period constitutes the cadet store fund, and it is the possession of this fund that enables the quartermaster of cadets to anticipate the wants of incoming classes and of the classes already in the academy, and to purchase for them and have the same on hand ready when required all of the articles of every description necessary for the proper maintenance at the academy other than, as stated above, his subsistence and medicines.

Since 1876 an effort has constantly been made to supply all articles to cadets at cost. Congress makes no appropriation for the salaries of clerks, cutters of clothing, and janitor, and as these persons are absolutely essential to the proper conduct of the business of the department, their salaries must be provided for by the department; the actual cost of the supplies furnished is, therefore, what it costs to deliver the article over the counter to the cadet, and an advance of 5 per cent over all invoices is charged to cover the transportation and the salaries of necessary employees.

Purchases of supplies are made either under advertisements for proposals or in open market, as the interests of the department require.

Some of the supplies required can not be obtained in this country, and, therefore, imported articles are used, such as white linen duck, used for white clothing, Lisle and Berlin gloves, gold lace for chevrons, and some other articles. When domestic articles can be had suitable for the needs of the cadets, preference is always given to such.

Purchases are made so as to get all discounts for cash, and the prices paid, with stated discounts, are shown on the face of every voucher, the receipt of the payee being for the reduced or net amount.

The department consists of a store and storerooms, requiring 4 clerks, a tailor shop requiring 2 cutters and about 30 tailors and tailoresses employed in manufacturing and repairing clothing, and a shoe-repairing shop in which 3 men are constantly, and often more men temporarily, employed in repairing shoes; all articles of uniform clothing are cut and manufactured in the department.

The numerous articles constituting the supply list at the store, stated in a general way, are as follows: The various articles of cadets and officers' uniform clothing, cadets' head wear, foot wear, underwear, and furnishing goods, room furniture, bedding, and drawing materials, and all text and reference books, numbering in all 457 separate articles.

The first Monday in each month is the regular day on which cadets submit their requisitions for articles; these requisitions are acted upon by the commandant of cadets; the cadet receives the articles designated on his approved requisition, and they are then charged against him in his account book and also in the account books of the store. Should sudden necessity arise for articles, cadets then submit special applications for them, through the proper channels, to the Superintendent for his action.

In addition to the inventory book, there are books used in keeping the accounts in the store with cadets and others, as follows: One cadet ledger, 1 officers' ledger, 1 new-clothing book, 1 clothing-repaired book, 1 shoes-repaired book, 1 measure book, 1 inspection book, 1 invoice book, and 1 book for the board of inspectors.

Every article of clothing, head wear, and shoes, issued to cadets is inspected by an officer detailed for the purpose.

This inspection determines the question of exactness of uniform, uniformity in the appearance of the corps, and any question which might arise in the mind of the cadet as to the fit and finish of the various articles issued to cadets that are subject to inspection.

The cadet store is essentially cooperative in its results, supplying at actual cost to the cadet the articles which he receives, giving to all articles of the same quality and supplying to each all of his authorized personal necessities.

CADET LAUNDRY.

The steam laundry was established in 1865. Previous to that time the washing for cadets was done by women living on the post or in its vicinity, but principally by the wives of members of the band.

In 1869 the laundry was destroyed by fire, but was immediately rebuilt, and in 1888 the laundry building was enlarged, and again in 1901 to its present size. There is in the laundry the following necessary machinery: One 60-horsepower Fitzgibbon steam boiler, 1 40-horsepower Ames automatic engine, 5 Troy brass washers, inside cylinder 36 by 62 inches, with partitions; 3 Troy 30-inch solid curb extractors with friction pulleys, 1 Troy 100-inch duplex mangle, 1 Troy clothes tumbler, 1 Troy starch tumbler, 1 50-gallon starch cooker, 1 No. 3 Troy collar and cuff starcher, 1 No. 2 Troy blower, 1 Troy 40-inch roll collar and cuff ironer, 7 rolls; 2 reversible-body ironers, 2 old-style body ironers, short roll; 25 Fletcher sad-iron heaters, 1 Troy roller collar shaper, 1 Troy shirt, collar, and cuff dampener, 1 Tolhurst extractor, 36 inches; 1 American body ironer, long roll; 1 Shaw collar and cuff shaper and edger, 18 short ironing tables, 12 assorting tables, 2 long ironing tables, 24 laundry baskets, and 15 laundry trucks.

The amount of work performed at the laundry is very great, as is shown by the fact that 899,894 pieces were laundered during the year ending June 30, 1902.

Charges for work at the laundry are such as will insure the cost of running expenses. The coal consumed is furnished by the General Government, but cost of washing material and wages paid to employees are paid out of the receipts of the laundry.

The prices charged to cadets and officers for work done at the laundry are very moderate, as the effort is constantly made to make the laundry no more than self-supporting. All the linen of the cadet mess and of the cadet hospital is washed free of charge. These two items amounted to 119,984 pieces for the year ending June 30, 1902.

The employees are as follows: One manager and engineer, 12 men and boys, and from 50 to 60 women.

THOS. FRANKLIN,
*Captain, Commissary Treasurer of the Military Academy,
Quartermaster and Commissary of Cadets.*

NOTE.—To the information furnished in the foregoing memorandum it is only important to add that the cadet store fund, which has arisen from the accumulation of profits, now amounts to \$40,000. It is by the possession of this cash fund that opportunity is given to purchase supplies for the store at cash discount prices. As a result, the cadet store is enabled to sell to the cadets articles at a low cash price.

In recent years the Boards of Visitors to the Academy have, with scarcely if any exception, recommended that the cadets be relieved from certain expenses which it has been contended should be borne by the Government. In investigating this question your committee requested an expression of opinion from the Superintendent, and in response received the following letter from him containing recommendations in which, after careful examination, we entirely concur.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., June 6, 1903.

SIR: In compliance with your verbal request of yesterday I have the honor to submit for the consideration of your committee a recommendation that cadets be relieved from the cost of providing for the following necessary services by small annual appropriations, as follows:

Pay of the chef of the cadet mess.....	\$75
Pay of head baker of the cadet mess.....	60
Pay of steward of the cadet mess.....	50
Pay of head waiter of the cadet mess.....	50
Total	235

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The amounts named will pay the wages of the heads of the various departments of the cadet mess, and though the total amount is less than one-fifth of the average monthly pay roll of the mess, it will be of material assistance in reducing the cost to cadets of this necessary service.

I also recommend for consideration the making of an annual appropriation for the two following items:

Purchase of table linen to make good losses occasioned by fair wear and tear during the course of each year.....	\$1, 400
Renewal of china and table ware, such as knives, forks, spoons, etc., and other mess furniture	2, 200

The above amounts are based on the actual money expended during the past two years for the purposes indicated. Table linen and napkins are changed daily, necessitating two sets in active use all the time, so that the linen is washed every other day. This is severe wear and the best and heaviest linen cloths do not last longer than six months. The napkins wear about nine months.

With the best of care china dishes get broken, and although the system of caring for all the articles of this nature in the cadet mess is very exacting and rigidly carried out, every cadet breaking a dish or any other utensils being at once required to sign a printed slip for the damage done, the cost of which is taken from his pay, and every employee of the mess who breaks or destroys any property is also charged with the cost of the same. A considerable portion of the china becomes chipped or cracked and finally has to be discarded. The silverware also requires repairing or replating occasionally, and a small quantity each year becomes unfit for further use and has to be replaced. At the present time the mess is equipped with large, old-fashioned, individual coffee urns for each table. They have been repaired many times and the majority have finally arrived at a state where they will have to be replaced in a short time, involving an expenditure of at least \$300 for the purpose. With the exception of these urns, the table equipment of the mess is in an excellent state, and by small annual appropriations can always be kept so.

I beg also to recommend that Congress be requested to give an annual appropriation to pay the cost of all the amounts now charged to cadets under the head of "Policing barracks and baths," and for the payment of the gas consumed by them in their barracks and lavatories. Also for the purchase of the simple articles of furniture necessary in furnishing their rooms, such as washstands, chairs, buckets, window shades and fixtures, and gas-lighting apparatus. These particular items have already been furnished you in detail by Captain Franklin, the treasurer of the Military Academy.

Very respectfully,

A. L. MILLS,
Colonel, U. S. Army, Superintendent.

Hon. A. O. BACON,
Chairman of Fiscal Committee,
Board of Visitors, United States Military Academy.

Relative to the items of expense mentioned in the last paragraph of Colonel Mills's letter, it is found upon investigation that "policing barracks and baths" means that cadets are charged for the pay of certain men, termed "policemen," who are hired by the commandant of cadets and whose duties are to keep the barracks, the area of barracks, the water-closets, and bathrooms (all public buildings and grounds and all used by cadets only) in a cleanly condition; to clean the shoes and to varnish the black belts of cadets, and to do such other menial work in and around these public buildings as may be necessary.

The cadets are also charged for certain furniture for their rooms, such as shade fixtures, shades for the windows, globes, mantles, and chimneys for gas burners; soap and other cleaning material for cleaning hallways, windows, etc., in barracks, also in the water-closets and bathrooms; for shoe brushes and shoe blacking; for material for varnishing the black leather cartridge boxes, and for toilet paper used in the water-closets.

The charge for "gas" is for the gas consumed in the cadet's room where he prepares his lessons and where he is required by order to

remain for certain hours in the evening; also for the gas used in lighting hallways, bathrooms, and water-closets.

The "washstand fund" is for the purpose of providing washstands and washstand furniture, such as wash bowls, water buckets, etc., for the use of cadets and keeping same in good condition.

The amounts collected from cadets for these charges for the year May 1, 1902, to May 1, 1903, are as follows:

For policing barracks, baths, etc.....	\$6, 637. 22
For gas.....	1, 760. 70
For washstand fund.....	404. 69

a total of \$8,802.61 collected from cadets mainly for the purpose of caring for public buildings.

In order that the board may understand how this works out individually, the following statement is made:

AMOUNT PAID BY EACH CADET FROM MAY 1, 1902, TO MAY 1, 1903.

Policing barracks, baths, etc.....	\$16. 08
Gas fund.....	4. 20
Washstand fund.....	. 90
Total.....	21. 18

Out of his pay the cadet pays for his food, clothing, laundry, cost of policing barracks, baths, shoe blacking, varnishing, gas, his social amusements, field games, literary society, text-books (many of which being purely technical are costly); drawing instruments, also costly; his expenses to and from home on the furlough granted at the end of two years; in fact, for everything incidental to his maintenance at the Academy except the actual heating of the buildings he occupies and his tuition.

If the cadets should be relieved from the foregoing expenses the fund thus saved to them could, in part, be added to the amount reserved each month for their equipment after graduation, while the remainder would be at their disposition for current expenses, subject to the supervision of the proper officers. Although the amount reserved each month for final equipment has recently been increased, it is, according to the statement of the Superintendent, still insufficient for the purpose, with the increased cost of all articles necessary for the same, and in the matter of current expenses it has only been through the most rigid supervision of each requisition of each cadet by the commandant, Colonel Treat, that the corps has been brought out of debt.

Your committee feel impelled to make the recommendations concerning the lessening of the expense to the cadets for the reason that all material purchased at the present time is very much higher than formerly, and the equipment essential upon his graduation is very much more expensive than it has been in former years.

Investigation has satisfied the committee that the pay and allowances of the Superintendent are insufficient to pay the expenses which he must necessarily incur in the office.

The Military Academy is yearly becoming of increasing interest not only to Americans but to foreigners, and the courtesies and attentions to them, the duty of which devolves upon the Superintendent, are almost continuous, and will necessarily impose upon him very great expense. We recommend that the allowance for contingencies, in

addition to the pay of the Superintendent, be increased from the present amount of \$1,000 to \$2,500.

The present pay of the chaplain of the post is also entirely inadequate, and we recommend that it be increased so that he shall receive \$3,000. This position should at all times be filled by a clergyman qualified by character and high attainments to exercise in a marked degree a wholesome and positive influence on the large and increasing Corps of Cadets, removed as they are from the influence of home during the formative period of their characters. The compensation must be such as to make it possible to secure such a man and to enable him to support his family and maintain himself in a manner appropriate to his position and environment.

The committee avail themselves of the opportunity to express their appreciation of the active and courteous assistance which has been given to them in the progress of their investigations by the Superintendent, Colonel Mills, by the commandant, Lieutenant-Colonel Treat, and by the treasurer and captain-quartermaster, Captain Franklin.

Respectfully submitted.

AUGUSTUS O. BACON.
RUSSELL A. ALGER.
GEO. W. BAXTER.

Hon. D. B. HENDERSON,
President Board of Visitors, West Point, N. Y.

REPORT OF THE COMMITTEE ON WATER SUPPLY.

WEST POINT, N. Y., *June 6, 1903.*

SIR: The question of an adequate supply of water for the Military Academy is one of pressing importance, and has received at the hands of each Board of Visitors and the authorities in charge of the Academy careful consideration for the past fifteen years. Carrying out recommendations made heretofore, the Congress of the United States has appropriated large sums of money with the idea that the amount appropriated would meet the requirements of the Academy not only for the then present needs, but future wants; but it is demonstrated that heretofore the provisions made for a supply of water must in the near future prove totally inadequate for the needs of the institution.

There has been money enough expended, if proper steps had been taken in the beginning, to have guaranteed the institution an ample supply of water for all future time. The Congress of the United States has probably been more in fault than any other body for the present situation. The plans adopted heretofore have been those costing the least money, with the hope that the supply would be adequate. The authorities of the Academy, with the possible desire to show an economical management, have also been to blame for not insisting on an expenditure of money to reach a supply of water of sufficient volume to render certain the constant flow necessary to supply the post, no matter how much it may be enlarged.

The committee on water supply have carefully gone over the ground from which it is possible to obtain additions to the supply now controlled by the Government. We found all the streams supplying the

post dry; the Lusk Reservoir, which should be at this time filled to its full capacity, largely reduced, and the ordinary dry season just commencing. The Lusk Reservoir, when built, was supposed to furnish an ample reserve supply of water to meet any possible conditions which might arise. The recent increase in the size of the post, together with unusual climatic conditions, have proven that this reserve is not adequate for the post as now constituted, and unless heavy and continuous rains should come in the near future there must be a material reduction in the consumption of water at the Academy or there will be grave danger of a water famine.

The Congress having made ample provision for buildings and grounds, and the plans being approved by the Secretary of War, as provided in the law, insures a very large extension of the post in the immediate future and makes more imperative than ever the necessity for immediate steps for an increase of water.

The river at this point is so impregnated with sea water that it is utterly unfit for drinking purposes, and is not believed to be of enough freedom from salt to permit its use for sprinkling lawns. The possibility of a new system of water supply for the flushing and sprinkling by means of water taken from the river has been considered, and your committee would suggest the advisability of the authorities making a full estimate of how much water could be saved from the regular water supply and what expense it would be to the Government to use this water for flushing and, so far as practicable, for sprinkling purposes, and whether, if that should be done, the supply of fresh water obtainable from present sources would meet the demands of the post when the improvements now authorized shall have been completed.

The committee made examination of three new sources of supply. The first one investigated is from Popolopen Creek. This stream has a drainage area, as we are informed by the authorities of the Academy, of some 29 square miles. Its principal sources lie in the highlands of the Hudson at a distance of from 3 to 6 miles, measuring directly from the Hudson River. It has been proposed that the Government acquire a right to this water and place an intake on the stream at the mouth of Queensboro Brook and convey it by pipe line some 7 or 8 miles to the Academy grounds.

In the opinion of the engineer officer in charge at West Point, there is no question but this stream would give a water supply of practically unlimited quantities for the use of the post.

Another source of supply investigated is popularly known as Bog Meadow Pond. That is much nearer to the post, and its outlet would require very little additional piping to connect it with the water supply of the reservation as now established. The watershed, however, feeding the Bog Meadow Pond and its outlet is exceedingly limited, and it is a question of whether or not the purchase of this property would not be a continuation of the past policy of the Government in simply meeting present emergencies without making ample provision for future needs.

Another source is known as Long Pond, lying just over a dividing range from the Bog Meadow Pond. This would give us a considerable water supply, but would also be subject to the danger that when the reservoir of Long Pond was once pumped out it would require an extra amount of precipitation to restore it to its present condition.

In other words, the territory from which this pond is fed is exceedingly limited, having only about 900 acres of a watershed. No water is used now from this pond except the natural waste by the stream from which its surplus waters are discharged, so that during the dry season there is nothing lost except by evaporation. There is no doubt but it would meet the demands for some years, but there is a serious question as to whether it would be a permanent solution to the trouble confronting the post.

The Bog Meadow Pond has a watershed of about 450 acres, so that it is even less than Long Pond, but the stream from which its surplus waters are discharged gathers up a considerable watershed of its own that would be valuable in filling reservoirs, but not as a permanent supply.

Your committee found that these properties are all held at an exceedingly high price. The country in which they are situated is practically worthless, and if it were not for the necessities of the military reservation they would have a small commercial value. The owners, however, recognize the necessities of the Academy and realize that there is scarcely any other possibility of increasing the water supply except through one of these three propositions, unless the Hudson River can be utilized. The water furnished from either of these sources of supply is substantially the same quality and character, and in this respect the Government could not desire anything better.

Your committee would recommend that the authorities of the Academy be requested to take options on these three different properties, so that if Congress should appropriate money for the purchase of additional water supply, the owners would not again advance the price of the properties. There has been a constant tendency for the past ten years to advance the selling price of these properties as it became more and more apparent that the Government must supply additional water.

During part of the year there is a large amount of water that is not stored with present facilities, which, if it were possible to construct additional reservoirs, might supplement the supply at the Academy at this time to such an extent as to guarantee a full and ample supply of water under all conditions.

Your committee would suggest that the authorities make a full investigation of this proposition and submit to Congress estimates, if it is advisable, to increase the supply in this way.

Your committee further recommend that the engineer officer in charge be required to submit a full estimate of the expense of connecting each of these sources of supply with the water mains now on the post.

The committee also find that in the event of the purchase of the Popolopen property it is practicable to construct upon this property a storage reservoir of very large capacity, and we recommend that the engineer officer in charge be directed to submit to the Secretary of War for transmission to Congress a full and detailed estimate of the cost to the Government of the construction of such reservoir. Your committee do not believe that it will be necessary for many years in the future, if ever, to construct such a reservoir, and only make this suggestion out of abundant caution.

Whatever is done in the way of increasing the supply of water, great care should be taken that provision should be made for all future

time to secure a full supply of pure water for use of the Academy, and that we do not be confronted in the future with the constantly recurring danger of a water famine.

Respectfully submitted.

J. A. T. HULL.
JOS. G. DARLINGTON.
DAVID A. DE ARMOND.
AUGUSTUS O. BACON.
WILLIAM A. PEW, Jr.

Hon. D. B. HENDERSON,
President Board of Visitors, West Point, N. Y.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., June 2, 1903.

SIR: I have the honor to invite the attention of the Board of Visitors to the great necessity for an increase in the water supply at the Military Academy at an early date and to request that the board in its labors investigate this subject.

Very respectfully,

A. L. MILLS,
Colonel, U. S. Army, Superintendent.

The PRESIDENT OF THE BOARD OF VISITORS,
West Point, N. Y.

**REPORT OF THE COMMITTEE ON INSTRUCTION, DISCIPLINE,
ATHLETICS, AND EXAMINATIONS.**

WEST POINT, N. Y., *June 8, 1903.*

SIR: The following report is respectfully submitted by the committee on instruction, discipline, athletics, and examinations:

INSTRUCTION.

In all departments the teaching methods employed at the Academy are along the lines of thoroughness and practical results. The recitations and examinations attended by the committee showed that a very high degree of proficiency has been attained.

In view of the largely increased intercourse of the Army with Spanish-speaking people, it seems imperative that our officers should be qualified as well as possible to converse fluently in the Spanish language. The committee approves the recommendation of the Superintendent in his letter of June 2, 1903, addressed to the president of the Board of Visitors (Doc. No. 1). If for any reason this recommendation is not acted on by Congress, your committee suggests that the places of Spanish and history in the present curriculum be interchanged, so that the latter may be taught in the third class year and the former be taught in the second half of the first class year. This arrangement will enable such members of the class as may be assigned to duty in the Philippines, Porto Rico, Cuba, or the Mexican border to perfect their knowledge of the Spanish language while their academic acquirement is still fresh in their minds.

DISCIPLINE.

The discipline of the Academy is in a highly satisfactory condition. The unsoldierly practice of harassing and ill-treating new cadets, commonly known as "hazing," has at last been eliminated from the Corps of Cadets. This fact is all the more gratifying because, having been brought about by spontaneity of action of the cadets themselves rather than by coercive measures of the academic officers, it gives assurance of perpetuity.

ATHLETICS.

In addition to excellent gymnasium facilities we would call attention to the calisthenic exercises, an outline of which is presented herewith. The corps is unusually efficient in the ordinary outdoor games—football, baseball, polo, field sports, etc.

The tactical instruction in the various drills—infantry, cavalry, and artillery—combined with the regular athletic system of the Academy, furnish the cadets with a course of physical development superior to that of any other educational institution in this country.

EXAMINATIONS.

Some of the examinations attended by your committee were oral and some written. The former showed the same thoroughness and mastery of the subject as evinced in the regular recitations; the latter, of course, have been critically examined by the respective professors and instructors and properly reported on.

The committee heartily approves the plan recently adopted by the academic board, and pursued during the last academic year, of exempting from final examinations those cadets whose term average is not less 2.5 in a maximum of 3. It is the term work that measures properly the industry and working ability of the student, and not the spasmodic preparation for a single examination. According to the statements of the professors the plan has been found to be a wholesome stimulant to the steady, persistent effort which best promotes mental development. To those who fall behind the 2.5 standard fixed, but make at least an average of 2, the examination gives a desirable opportunity to improve the term mark, and thus becomes an inducement to persist to the end.

Respectfully submitted.

ASBURY COWARD.
ERNEST M. STIRES.
WILLIAM A. PEW, JR.

Hon. D. B. HENDERSON,
President Board of Visitors, West Point, N. Y.

[Document No. 1.]

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., June 2, 1903.

SIR: Among the subjects which I would like respectfully to call to the attention of the Board of Visitors is the necessity for having at the Academy a small number of civilian instructors in modern languages.

A conversational knowledge of Spanish and French (the two foreign languages taught) is, of course, very difficult to acquire in the class room, but considerable attention has been given recently to this phase of the study of these languages, and there is no doubt that the ability of the graduate to acquire a speaking knowledge of one or both of these languages at the Academy and after leaving it would be readily increased if the instructors and cadets heard them spoken more in the class room.

With this object in view and with the idea of having in each language at least one person to whom the language is a home tongue it is requested that the Board of Visitors recommend that Congress make provision for the employment of three assistant instructors in the department of modern languages, to be civilians, natives of the countries where the languages are spoken; two for the Spanish and one for the French language.

The native instructors would not, of course, have the same military control over a section of cadets that an officer would have, but they would be used, first as a guide for the officers who act as instructors, and also to teach special sections or to take each section in turn a short time in order to verify what had been done and to increase the interest of the cadets in the subject.

The importance of the study of modern languages, especially Spanish, by the cadets can not, it is thought, be overestimated just at this time, when so many of the officers are stationed where a knowledge of Spanish would add so much to their usefulness.

It is thought that competent and suitable persons can be obtained at a salary of \$2,000 a year.

Very respectfully,

A. L. MILLS,
Colonel, U. S. Army, Superintendent.

The PRESIDENT OF THE BOARD OF VISITORS,
West Point, N. Y.

REPORT OF COMMITTEE ON INCREASE OF PLANT, ON BUILDINGS, GROUNDS, AND HYGIENE.

WEST POINT, N. Y., *June 6, 1903.*

SIR: Your committee on increase of plant, on buildings, grounds, and hygiene, begs leave to submit the following report:

Your committee has inspected the plans for the proposed enlargements and improvements at West Point unanimously chosen by the jury of award from among those submitted in anonymous competition by ten of the leading firms of architects in the country. (See Photographs.)

If the Academy is to continue in its good work and to meet the demands of the growing student body, it is apparent that the improvements contemplated should be met in a very liberal spirit.

Following the act of Congress of June 28, 1902, the general sketch of the plans selected by the unanimous vote of the jury of award, and approved and ratified by the Secretary of War—the work of Messrs. Cram, Goodhue & Ferguson, of Boston—meets this want. It is apparent that the architects have not only met all the requirements as outlined by Colonel Mills, Superintendent of the Academy, but have also kept in view the natural beauty and dignity of the place. The plans provide for additional cadet barracks, academic buildings, chapel, post headquarters, riding hall, hotel, and other buildings. Your committee would also suggest that the minor needed improvements asked for in the hospital be included. (Exhibit B, annexed.)

The plans and specifications should be limited so that the cost of the entire work provided for, including all the items, should not exceed \$5,000,000, thus leaving a margin of at least \$500,000 out of

the appropriation against contingencies. These conditions seem to your committee to be eminently reasonable and proper, and to cover all essentials. On the one hand, they are generous enough to allow room for originality and a general and comprehensive design, thus avoiding the necessity for merely adding to or changing those of the present buildings, which should be removed entirely. On the other hand, they are so conservative as to be a reminder that the proposed changes at West Point are intended to meet actual needs rather than to exploit an idea, however admirable in itself, and that the result is to be attained through economy due to forethought, not by free-handed experimenting, and the architects have succeeded in their efforts so to conform the needed buildings to the natural features that they should seem to grow out of them, rather than to be forced upon or ignore them.

With the completion of these plans the West Point Military Academy should enter upon a new era of extended usefulness, and one in which it bids fair to become as distinguished for the beauty and appropriateness of its architectural surroundings as it has always been for its training, its standard, and its service to the country.

In conclusion, your committee reports that it has made a careful inspection of the grounds of West Point, and find their hygienic condition to be excellent.

Respectfully submitted.

J. G. SCHMIDLAPP.

GEO. W. STEELE.

J. A. T. HULL.

Hon. D. B. HENDERSON,

President Board of Visitors, West Point, N. Y.

EXHIBIT B.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,

West Point, N. Y., June 9, 1903.

SIR: In compliance with your verbal request of yesterday, I have the honor to report that the following changes and alterations should be made in the cadet hospital, in order to best utilize its space and make the hospital most convenient for its purposes. The estimated cost of the necessary changes is given with each item.

The hospital corps is badly provided for in the third story of the main building, occupying rooms which should be reserved for officers and for private and infectious patients. The corps should be removed from that floor and transferred to the lower ward of the north wing, which is untiled and least suitable for patients, and to the basement of the south wing, using the ward as dormitory and the basement as kitchen and mess room. The basement, being raised above the outside level, is perfectly dry and can be made to answer its purpose in a very satisfactory manner.

Making necessary arrangements in basement of south wing for mess room and kitchen for hospital corps, including plastering, plumbing, and cooking apparatus.....	\$1, 250
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The third floor of the main building, consisting of 7 rooms, would then become available for much needed uses—for officers, for private, dangerous, or infectious cases, for eye examination, X-ray machine, etc.

Changing and renovating kitchen and dining room on third floor for use as wards or rooms for patients	250
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This floor needs a bathroom for which there is a suitable place.

One new bathroom, third floor, with fixtures and tiling.....	1, 100
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The ward in the north wing, intended for the hospital corps, should have 2 rooms for the noncommissioned officers, one on each side of the entrance. Such rooms will not detract from the appearance, convenience, or comfort of the dormitory.

Subdividing ward room of first story, north wing, for noncommissioned officers of the hospital corps	\$450
As the hospital is constructed, an ambulance containing a disabled patient can not get any nearer to it than the lower front gate, so that the patient must be carried on a litter up the steep graveled slope and the 22 stone steps to the first floor—a difficult and even dangerous undertaking, especially in winter. It seems, therefore, necessary to provide for an easier access, and this can easily be done by an iron bridge 50 feet long and 6 feet wide, connecting the wagon road in rear with the north hallway. Over this bridge patients can be carried from the ambulance to the ward without change of level. This bridge should be connected with the court by a stairway on each side.	
Iron bridge across court and stairways leading to court.....	750
The operating room is unnecessarily large and correspondingly difficult to keep surgically clean. As major operations are comparatively rare, it is now mostly used for minor (often) septic cases and as dressing room, which uses defeat the primary purpose of an operating room. It is therefore recommended that it be divided by a suitable partition into two rooms, one to be strictly reserved for serious operations and the other to be used for the daily treatment and dressing of minor surgical cases, as well as for anæsthesia.	
Subdividing operating room so as to make a room for minor cases, dressing, and anæsthesia, with corresponding tiled walls	500
The cadet mess room is now too small, and with the expected increase of cadets will be quite inadequate. It can easily be enlarged by taking in the space now occupied by the kitchen and constructing a new kitchen in the basement, mess room and kitchen being connected by dumb waiter. The refrigerating room and pantry can also be accommodated in basement.	
Enlarging and renovating present cadet mess room	250
New kitchen in basement, with plumbing, cooking apparatus, refrigerator, pantry, and dumb-waiter	1,300
As this kitchen in basement will block the passageway from court to basement, it will be necessary to open new doors into basement from the rear, one under each hallway.	
Making two new entrances to basement.....	300
A new bath room is necessary on the lower floor in main building, the best place for it being one of the pantries of the cadet kitchen.	
One new bath room, first floor, with fixtures and tiling.....	1,100
The removal of the hospital corps kitchen from the third floor rendering the elevator unnecessary, the shaft can be covered on each floor, thus providing a much-needed linen room on each floor.	
Making necessary arrangements to close elevator shaft and fitting up three linen rooms	225
Total	7,475

Very respectfully,

Hon. J. G. SCHMIDLAPP,
Chairman of Committee of Board of Visitors
on Increase of Plant, on Buildings, Grounds, and Hygiene,

A. L. MILLS,
Colonel, U. S. Army, Superintendent.

West Point, N. Y.

REPORT OF THE COMMITTEE ON ARMAMENT AND EQUIPMENT.

WEST POINT, June 5, 1903.

SIR: Your committee upon armament and equipment beg to report that they find the armament and equipment furnished by the General Government for the instruction of the cadets is, in general, excellent.

The greatest present need of the Academy in this line seems to be for a model seacoast battery which would afford the means of instruction in handling the latest types of large guns and carriages and the

appliances for their use, and your committee invites attention to the letter of the Superintendent of the Military Academy, dated June 2, 1903, touching this subject.

While the committee feel that such a battery as is suggested is not only desirable, but is needed, it refrains from making any recommendation in the premises because of its lack of information as to the cost of installing such a battery.

The importance, however, of the matter is emphasized when it is remembered that the Government has in recent years spent many millions of dollars on expensive machinery for the armament of its seacoast, and it is a matter of the highest importance that the cadet should have proper instruction in the use of the latest types of guns, such as are referred to in the letter of Superintendent Mills.

Your committee finds that the equipments of the cadet, which are furnished by the supply department of the Army, are of the latest service type and of excellent quality.

In the way of minor armament, such as machine, mountain, field, and siege guns, the conditions are entirely satisfactory. Additions to this class of armament are made from time to time by the Ordnance Department as new types are adopted for service, and the committee understands that the earliest productions of the new modern magazine rifle will be furnished for the use of the Corps of Cadets.

Respectfully,

GEO. W. BAXTER.
ASBURY COWARD.
GEO. W. STEELE.

Hon. D. B. HENDERSON,
President Board of Visitors.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., June 2, 1903.

SIR: I have the honor to invite the attention of the Board of Visitors to the need in the practical instruction of cadets, for a model seacoast battery mounting the latest types of ordnance and completely equipped with all the needful appliances for thorough instruction.

Such a model battery should comprise one 10-inch B. L. R. on a disappearing carriage, one 8-inch B. L. R. on nondisappearing carriage, one 6-inch R. F. gun and one 15-pounder R. F. gun on the latest type of service mounts, and one 12-inch B. L. mortar on spring return carriage, the whole to constitute a single continuous battery occupying approximately the site of the present siege battery.

The emplacements for this model battery should be complete in all details, with the latest appliances for serving the guns, and with a complete light and power plant, as follows:

Emplacements for the 8-inch and 10-inch B. L. R., with magazine and separate ammunition service; emplacement for one 6-inch R. F. gun, with magazine; emplacement for one 15-pounder R. F. gun, with magazine; emplacement for one 12-inch B. L. mortar, with magazine; fire commander and battery commanders' stations, electric generating plant, electric storage battery, one 30-inch electric-controlled searchlight.

Very respectfully,

A. L. MILLS,
Colonel, U. S. Army, Superintendent.

The PRESIDENT OF THE BOARD OF VISITORS,
West Point, N. Y.

**ADDRESS OF THE HON. D. B. HENDERSON, PRESIDENT OF THE
BOARD OF VISITORS, TO THE GRADUATING CLASS, UNITED
STATES MILITARY ACADEMY, WEST POINT, THURSDAY, JUNE
11, 1903.**

MR. SUPERINTENDENT AND GENTLEMEN OF THE GRADUATING CLASS:

That your country is taking an interest in these proceedings is manifest by what the Superintendent has just stated. Your country has put a law upon the statute books requiring the President of the Republic to designate seven members, the presiding officer of the Senate two, and the presiding officer of the House three, to constitute a board to annually visit this post to study its condition and make suggestions to Congress, through the Honorable Secretary of War, in respect to the interests of this military school.

In pursuance of that law the board have all been here and have devoted such time as was possible to studying the conditions of West Point. I can speak for the board that they have been delighted with what they have seen, and are unanimously of the opinion, which the world holds, I may say, that this is the greatest military educational school on earth.

There is something touching and heroic in this hour. You young men have dedicated your lives to death. There is no other construction that can be put upon your act. The volunteers of this Republic have done so again and again. You have deliberately taken that step and understand that when the war officer hands you your diploma you are commissioned to die, if need be, for this Republic. It is not an attractive office but it is a great office.

Personally I do not believe in war, and have uniformly in my public actions resisted it until satisfied that the time has come for a surgical operation. You young men are the surgeons of the Republic; but surgery must be used to save life; to heal, and not to destroy. Never forget the true use of the sword that you carry. You are the children of the Republic. It is true you have anxious and loving parents, and it is a delight to see so many of them here to-day to watch your advent into military life. But the Republic, after all, is a mother of the regular soldier. As you do not need to be told to be true to your own mother, never forget the mother that places you here to-day. Let life be freely offered for that mother, that loving parent. Unless you dedicate yourselves to-day to the defense of this Republic against all nations and States, you do not wisely comprehend the solemnity of this hour.

I pray God that you may never forget your flag, no matter what other flag may tempt you. But this is unnecessary to you young men. You will be true. Your bearing on these grounds, everything that you have done during the eleven days that we have spent with you, indicate that you are made of the right kind of metal, and you will use it faithfully when needed.

I want to speak of one thing particularly that is gratifying to us above everything else. You may not be aware of it, but the two National Academies have been looked upon with anxiety by the American people. This may surprise you, but it is true. I have felt it within my own breast.

The older members of the school and the stronger members of the school, physically and intellectually, have in the past lorded it a good deal over the little fellows, the young men, the newcomers. Gentlemen, if there is one lesson above another for you to learn it is that the American soldier must be a gentleman, and with a big heart for everything that is not as strong as he is.

What a gratification it was to me, as president of the Board of Visitors, when the committee appointed to investigate the question among other things reported that "hazing" was a thing of the past, and that the cadets at the Academy were in the forefront of working that revolution.

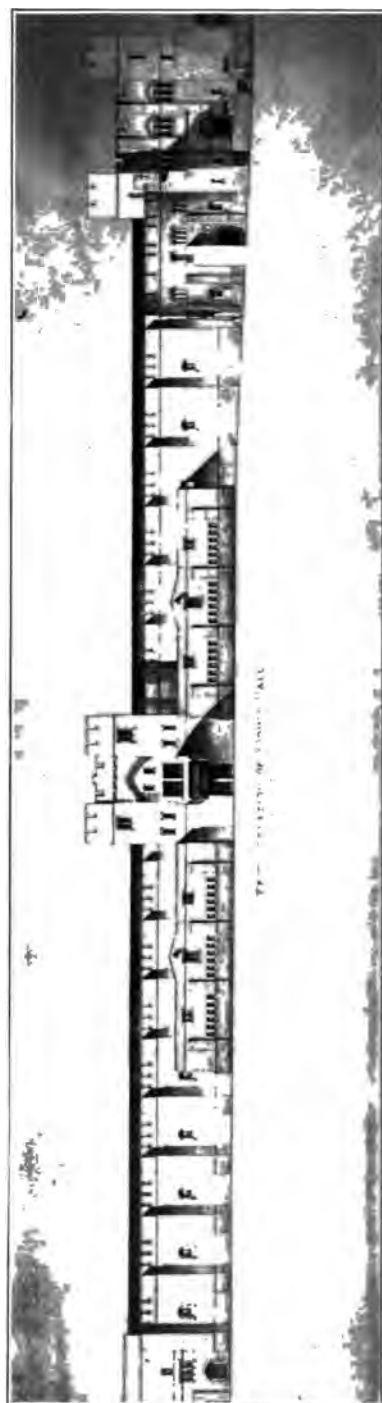
This will go into the records of this day's proceedings, and go to the country. I know some of you feel differently about it, as I have talked with a good many of you. Even some of the fourth-class men think they would like to have the older boys have the right to pound their heads to a jelly.

Whatever you may think personally, I say to you that your action in stamping this out and sustaining this great and good man who is Superintendent of this institute finds a happy echo in every American heart, and I want to thank the cadets for the great part they have taken in this reform. It has elevated you in the estimation of the people of this Republic. As I stated, it makes you gentlemen; there should be nothing superior, as a gentleman, to the graduate of the West Point Academy, and I believe there will not be.

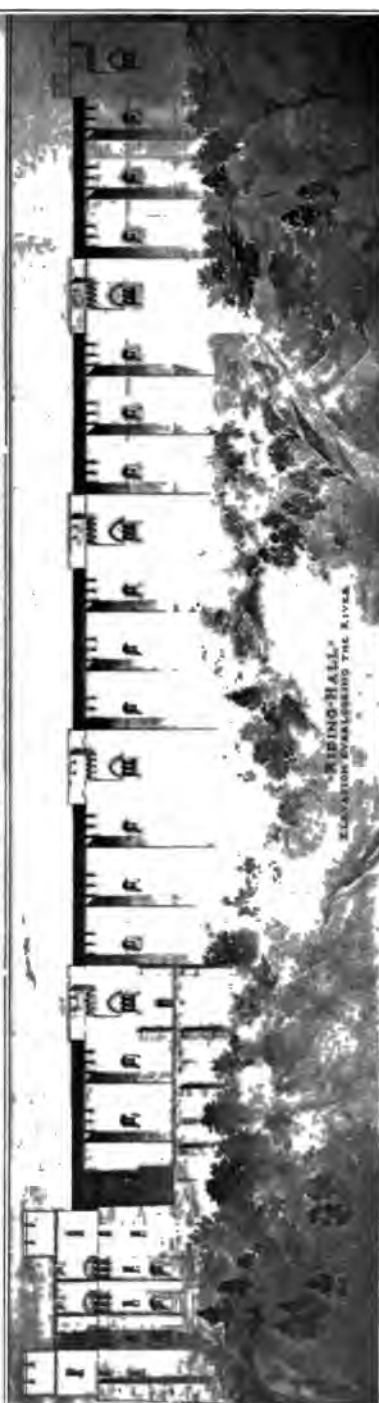
Now, gentlemen, this is not a time for a speech; it is simply an occasion for me to say a few words showing how we feel as a board, pointing out, as I have, the feelings of the Republic, and urging you on your way, never looking back, since your hand is at the plow, and wishing you, with a glowing heart, godspeed, as soldiers of the Republic.



GENERAL PLAN
SHOWING DEVELOPMENT OF THE CAMP AND BARRACKS
IMPROVEMENTS AT WEST POINT V. S. MILITARY ACADEMY



IMPROVEMENTS AT WEST POINT · V. S. MILITARY ACADEMY ·



SECTION LOOKING NORTH.



ELEVATION LOOKING WEST.

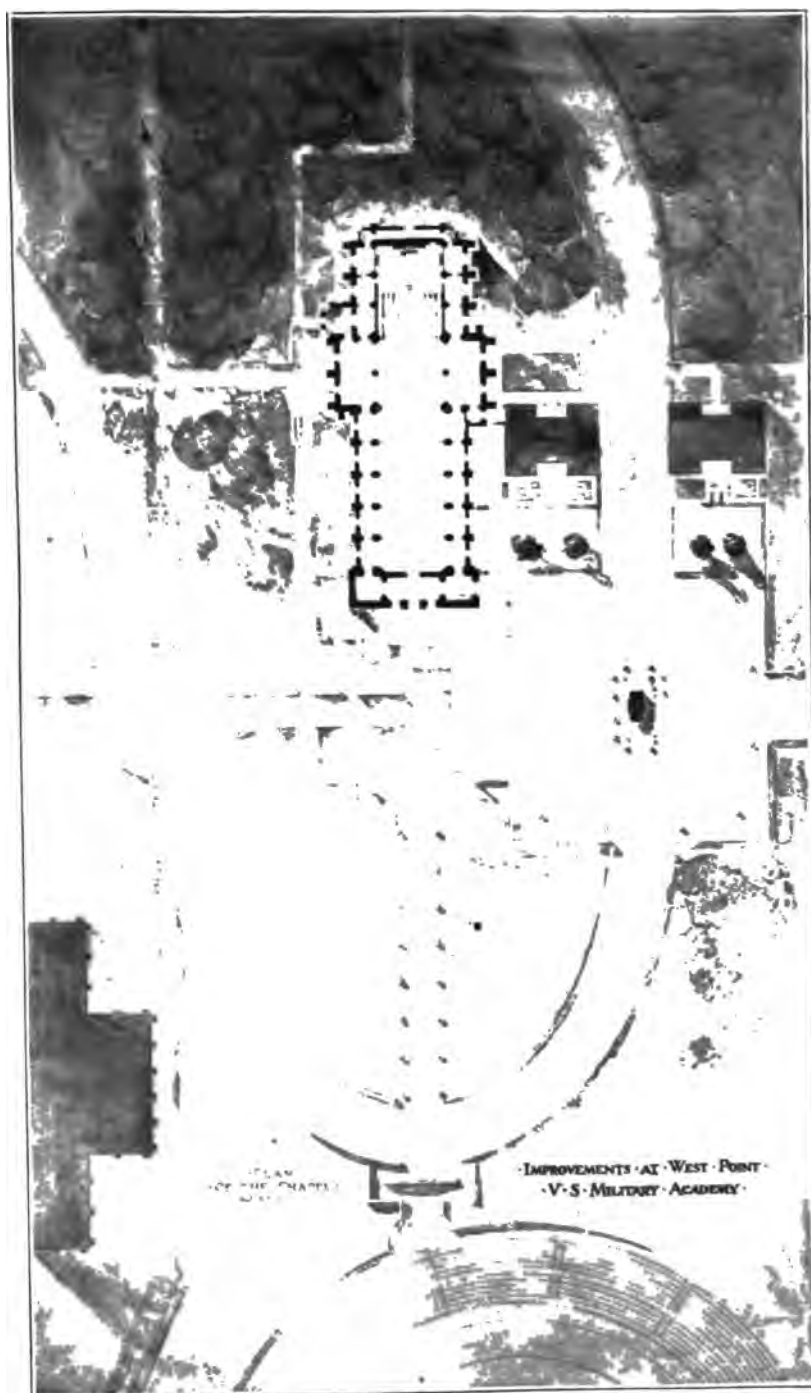


IMPROVEMENTS AT WEST POINT, U. S. MILITARY ACADEMY.



EIGHTH SCALE DRAWINGS OF THE CHAPEL.

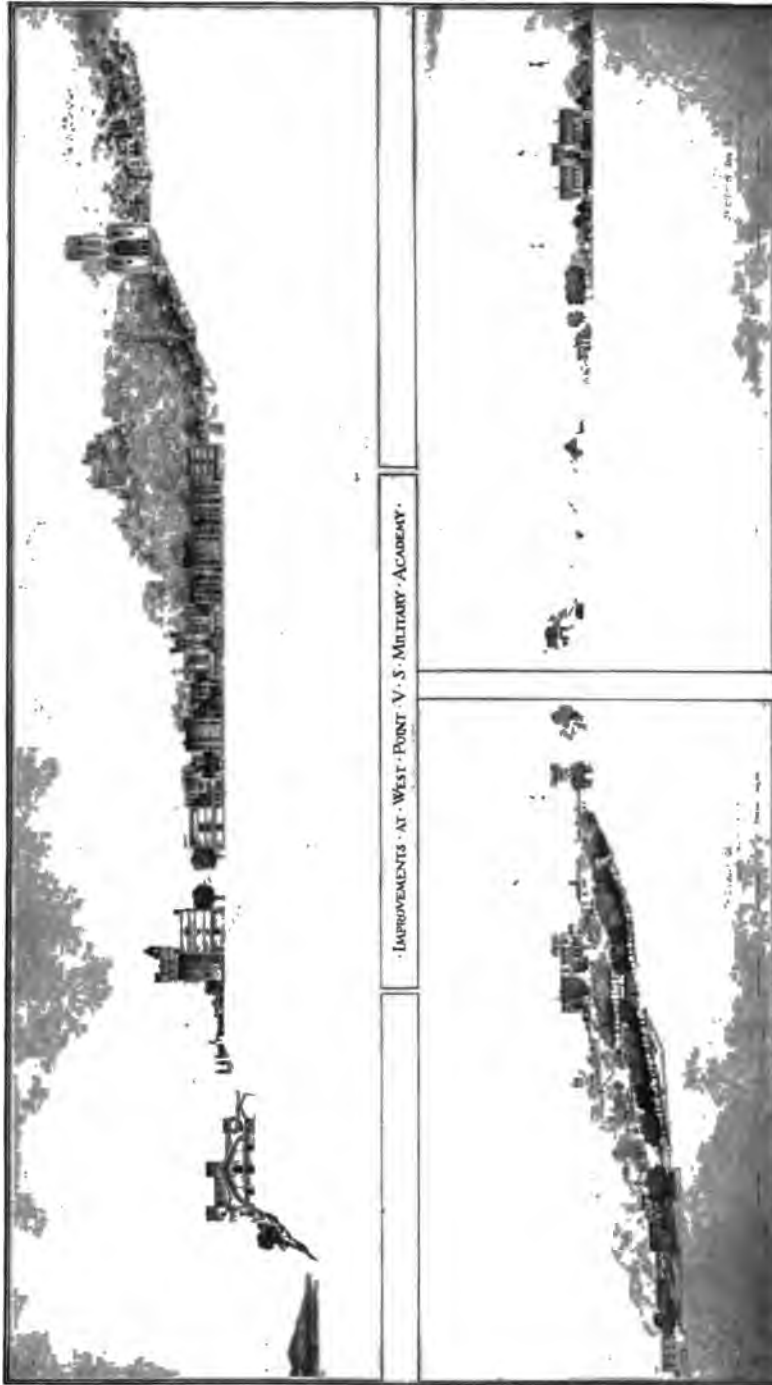


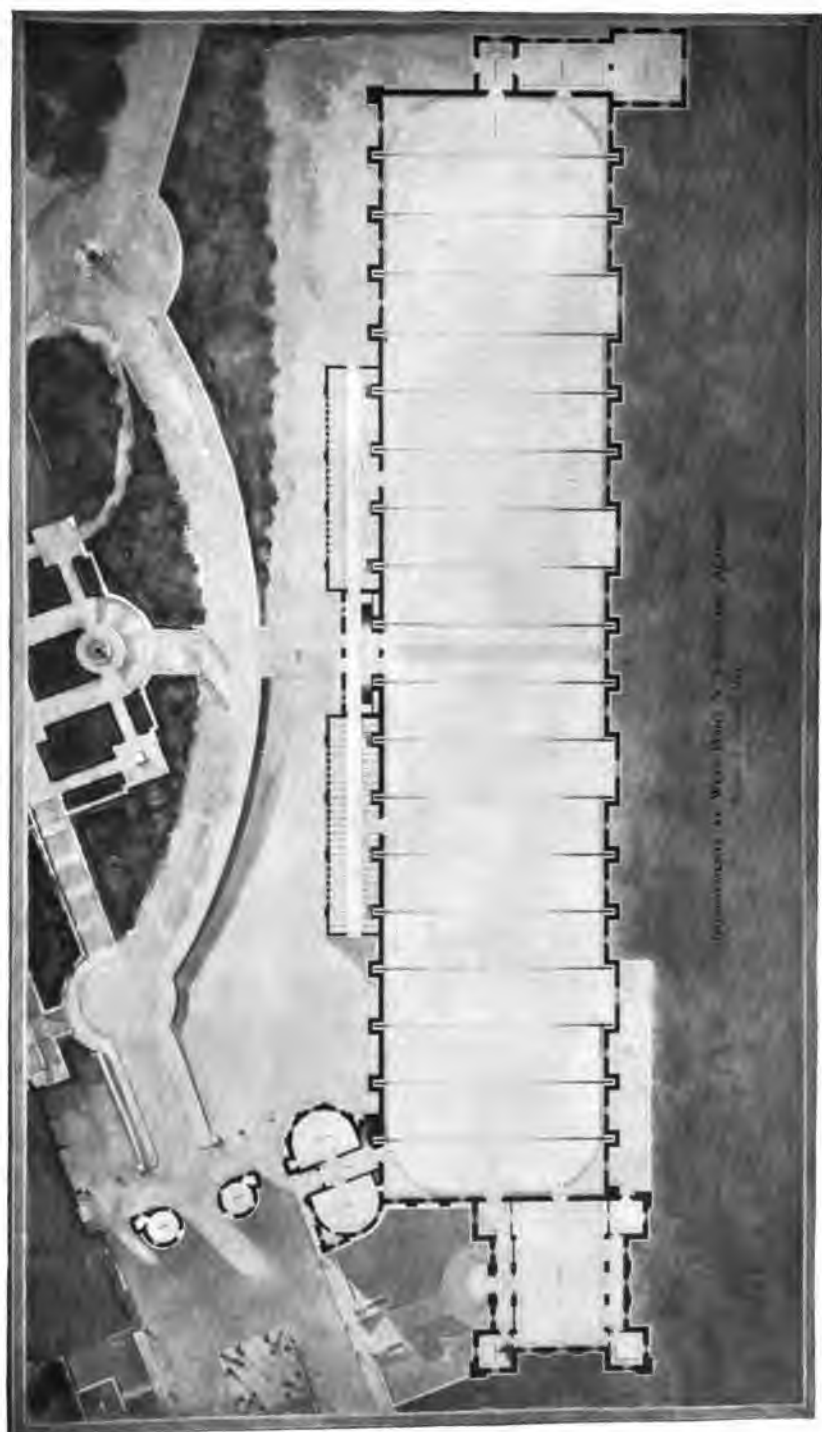


PLAN
OF THE CAMP

IMPROVEMENTS AT WEST POINT
U. S. MILITARY ACADEMY

SECTION LOOKING SOUTH.





Architectural drawing of the White House, New York, New York, by the Architectural Firm of the White House, New York, New York.



GYMNASIUM.



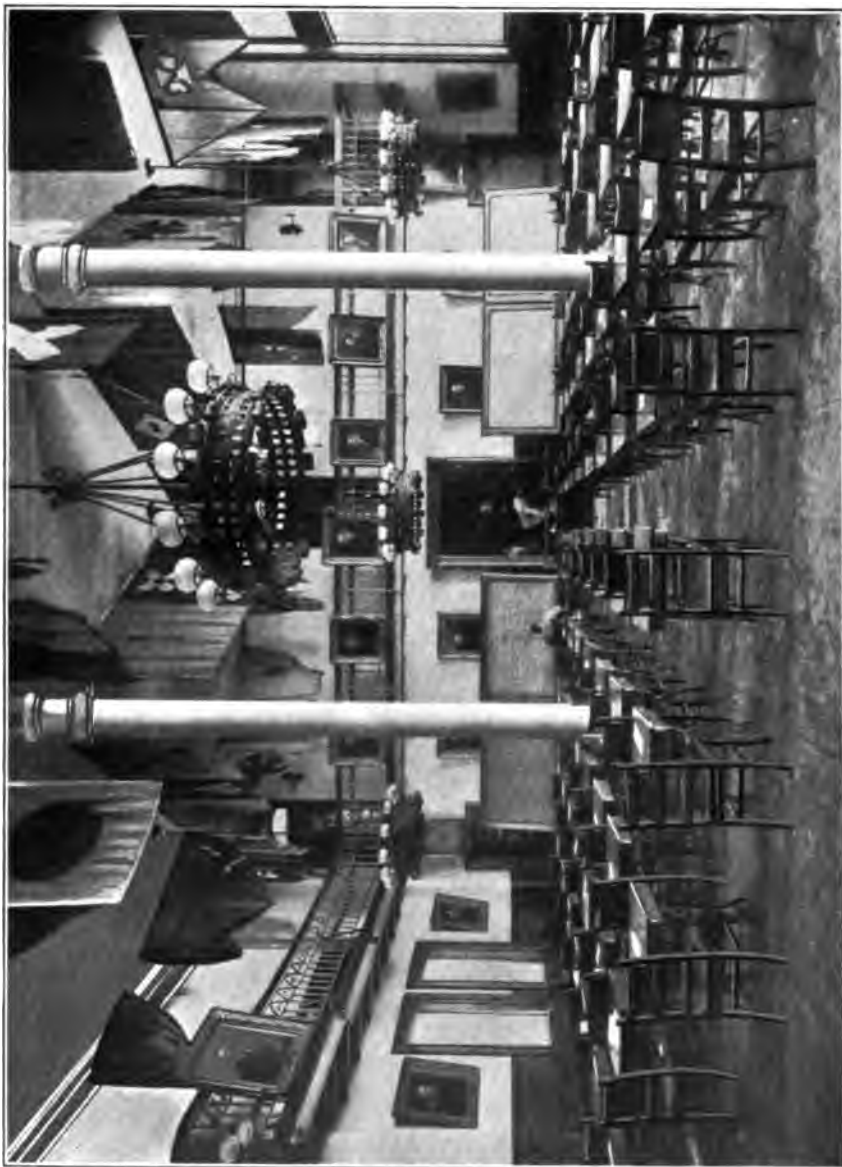
CHAPEL.



GRANT HALL—CADET MESS.



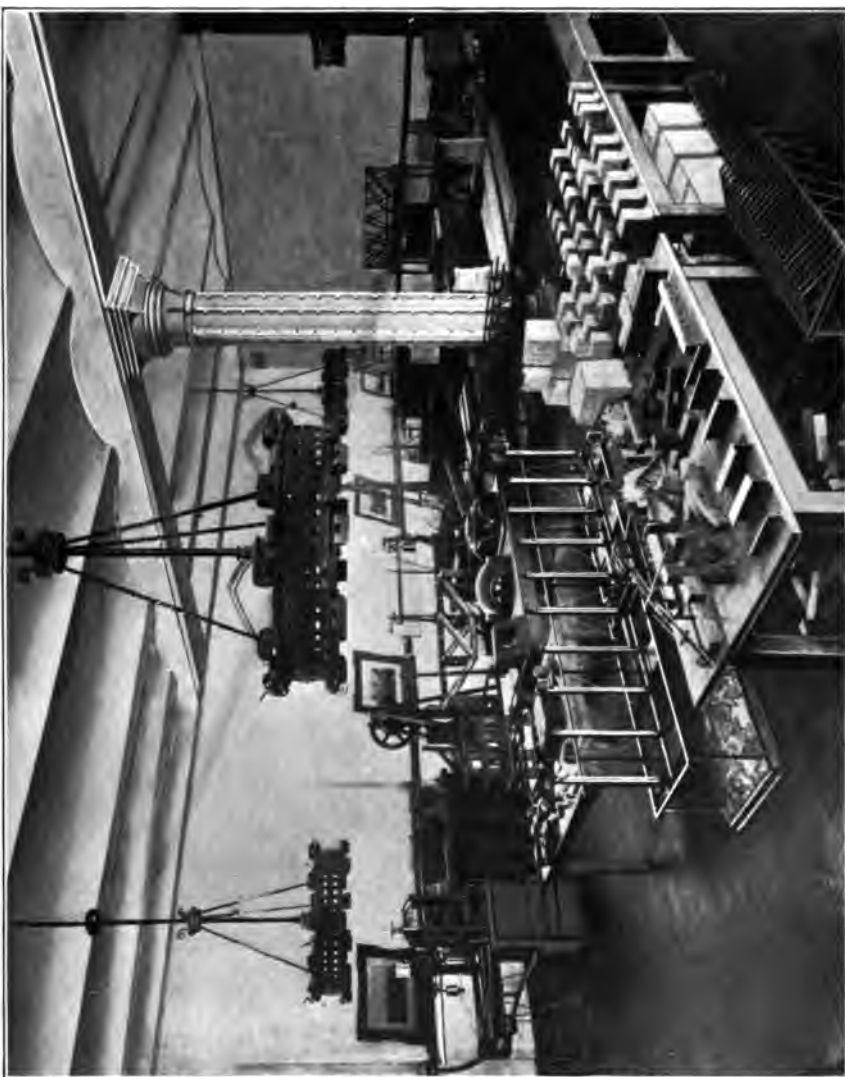
SEA COAST BATTERY.



EXAMINATION HALL—HALL OF SUPERINTENDENT, LOOKING WEST.



DEPARTMENT OF CHEMISTRY—LABORATORY.



DEPARTMENT OF ENGINEERING—MODEL ROOM.



DEPARTMENT OF ORDNANCE AND GUNNERY—SECTION ROOM.



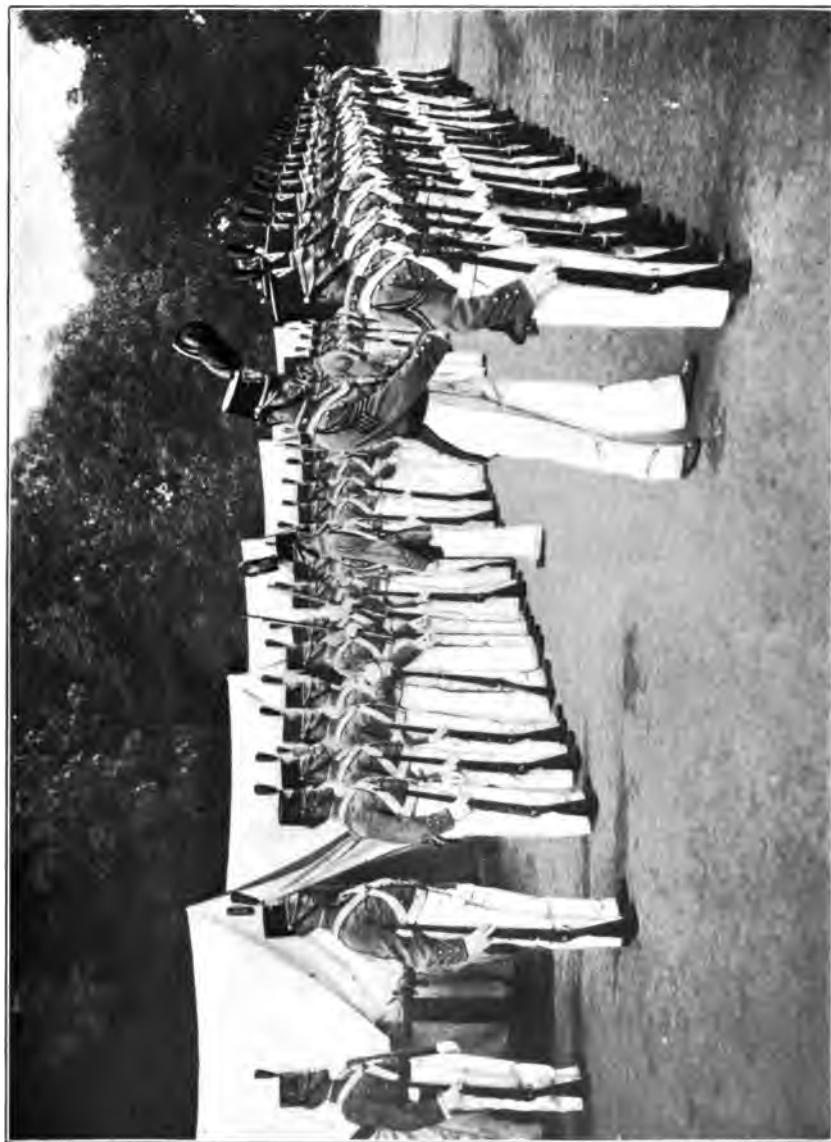
DRAWING ACADEMY—SECOND CLASS.



DRAWING ACADEMY—THIRD CLASS.



FIRE BY COMPANY—READY.



CAMP—INSPECTION OF COMPANY BEFORE PARADE.



IN THE FIELD—DINNER.



PACK SERVICE DRILL.



MARCHING TO DINNER FROM CAMP.



PACK TRAIN.



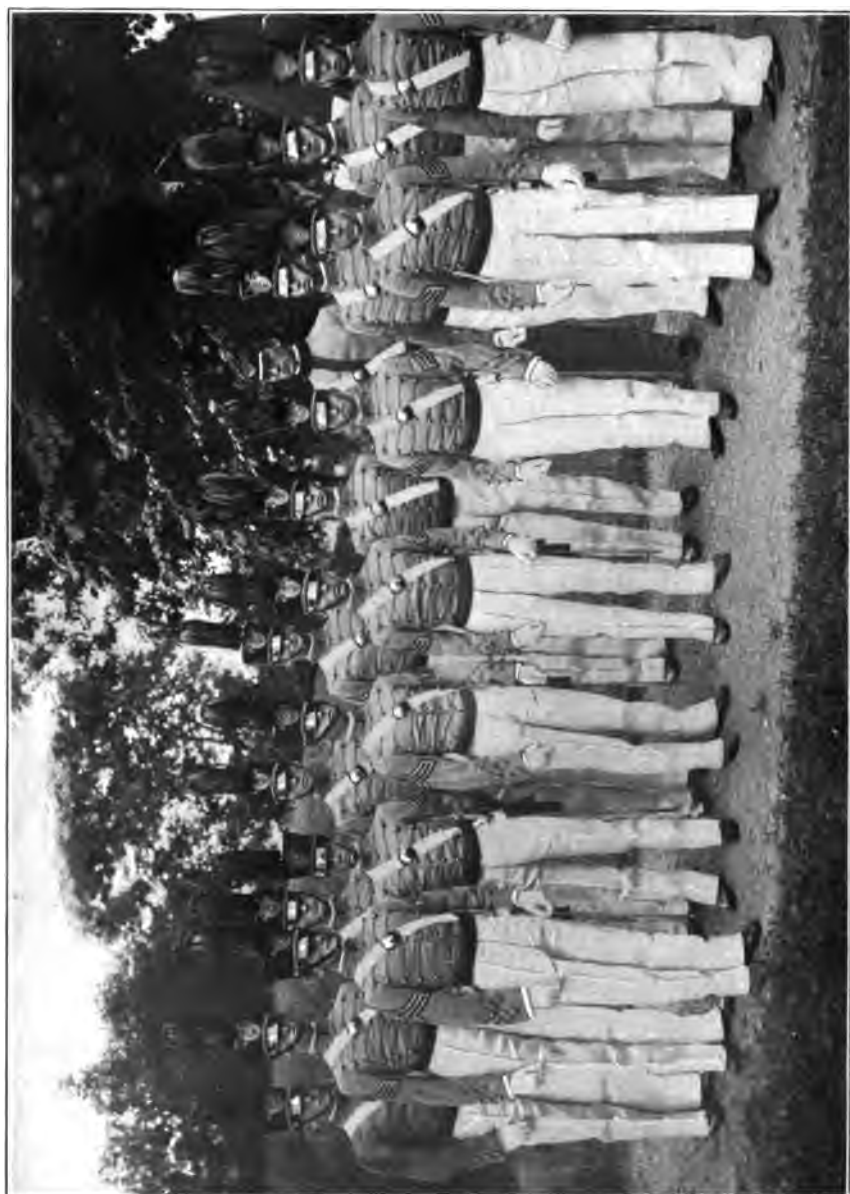
INSPECTION. HEAVY MARCHING ORDER.



CAVALRY.



IN THE FIELD—ON THE FIRING LINE.



CADET OFFICERS.



INSPECTION OF QUARTERS.



DRESS PARADE.



STANDING GUN DRILL.

**REPORT OF THE SUPERINTENDENT OF THE
UNITED STATES MILITARY ACADEMY.**

**REPORT OF COL. A. L. MILLS, U. S. ARMY, SUPERINTENDENT
UNITED STATES MILITARY ACADEMY.**

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 12, 1903.

SIR: I have the honor to submit the following report for the Military Academy for the year ending August 31, 1903:

I have performed the duties of Superintendent throughout the year, except for leaves of absence from January 9-16, July 14-21, and August 21-28, 1903, and for other short periods of time when absent in connection with the affairs of the academy.

PERSONNEL.

The number of officers and instructors assigned to duty here September 1, 1903, was 7 professors, 2 associate professors, 76 commissioned officers, 1 librarian, 1 chaplain, 1 contract dental surgeon, and 1 teacher of music, a total of 89. In addition, 2 officers were temporarily attached pending orders relieving them and changing their station.

The total for duty September 1, 1902, was 84. The increase is accounted for by 4 additional instructors, made necessary by the increased number of cadets, and an associate professor of modern languages. This office was provided for at the last session of Congress and has been filled by the detail of Capt. William Kelly, jr., Ninth Cavalry.

The only change in the personnel of the academic board during the year has been the relief of Capt. Joseph E. Kuhn, Corps of Engineers, as instructor of practical military engineering, by Capt. Mason M. Patrick, Corps of Engineers. In addition to being the head of a department of instruction, Captain Kuhn was charged with very important duties in connection with building construction and the project for increasing the water supply, and it is to be regretted that the requirements of the service should have necessitated the relief of this excellent officer one year in advance of the usual time.

Of the Military Academy staff, Maj. John B. Bellinger, quartermaster, U. S. Army, disbursing officer, has been relieved by Maj. John M. Carson, jr., quartermaster, U. S. Army; and Capt. William C. Rivers, First Cavalry, adjutant, by Capt. Frank W. Coe, Artillery Corps. Captain Rivers's excellent record of service has been recognized by his transfer to the General Staff Corps, which necessitated his relief.

The appended roster gives the names of all officers and shows the particular duties they perform.

34 SUPERINTENDENT UNITED STATES MILITARY ACADEMY.

The maximum number of cadets is 523, which includes 1 cadet from Costa Rica, receiving instruction under a joint resolution of Congress. The academic year opened with 495 on the rolls of the academy, the largest number ever belonging to it at one time. They are divided among the four classes as follows:

First class	125
Second class	118
Third class	93
Fourth class	159

The following changes occurred during the year: Discharged, 22 (deficiency in studies, 21; physical disability, 1); dismissed, 1; resigned, 24; graduated, 94, including Andres Ponte, of Venezuela, who was undergoing instruction at his own expense under special authority of Congress.

The regular examination of candidates for admission was again held at various Army posts throughout the country, on May 1, with satisfactory results. A special examination was also held at West Point, on July 27, in order to fill as many as possible of the large number of vacancies existing. This number was made larger than usual after the regular examination, due to the reapportionment of districts and the confusion resulting therefrom, which led, in many cases, to the appointments being received but a short time before the examination took place. It is hoped hereafter that it will not be found necessary to hold any entrance examinations other than the regular one about May 1.

For the examination in May there were appointed 351 candidates, including principals and alternates, and including also 2 former cadets. Eighty-one candidates failed to report, 7 alternates failed to report for physical examination, 6 principals were authorized to report for physical examination only on June 12, leaving 257 candidates to be examined by the medical board. Of these, 10 failed to complete their mental examination, 16 were rejected both mentally and physically, 39 were rejected upon mental examination, 37 who qualified either upon mental examination or on certificate were rejected physically. There were no vacancies for 28 qualified alternates. The number qualified in May and June and admitted in June was 124, composed as follows:

Former cadets who underwent physical examination only	2
Accepted on certificate, 76 principals and 9 alternates	85
Accepted on examination, 35 principals and 2 alternates	37
Total	124

For the July examination there were ordered to report 74 candidates, principals and alternates, and also 1 former cadet.

Fourteen candidates failed to report, leaving 60 to be examined by the medical board. The medical board accepted 52 and rejected 8. Four alternates, qualified physically, declined to take the mental examination, as their principals were qualified upon certificate and were also accepted by the medical board, leaving 48 candidates to be considered by the academic board. One former cadet was required to pass physical examination only, 21 principals and 4 alternates were accepted upon certificate, and upon examination the academic board accepted 11 principals and 1 alternate and rejected 7 principals and 3 alternates. There were no vacancies for 2 alternates qualified on certificate. As

a result of the July examination, 35 candidates were admitted August 1 and 1 on August 3. One former cadet was admitted on September 10, 1902, and 3 on August 28, 1903.

The following table gives the statistics relative to the present third class, which was the first class admitted to the academy under the new regulations authorizing the academic board to accept certificates from high schools, colleges, and universities in lieu of the regular mental examination. The table does not include cadets turned back, but deals only with the cadets belonging to the third class who were admitted in 1902. Attention is invited to the excellent showing of those admitted by certificate. This method of admission, as provided for in the new regulation, is giving results most satisfactory in every way:

Statistics regarding cadets admitted in 1902.

	On college certificate.	On high-school certificate.	On preliminary examination.	On certificate of competitive examination.	Act of Congress.	Total.
Not examined	1	1	2	0	0	4
Resigned:						
Not on account of low standing	4	2	4	0	0	10
On account of low standing ...	3	3	2	0	0	8
Deficient	4	2	6	0	0	12
Proficient	21	20	35	1	1	78
Total	33	28	49	1	1	112
Percentage deficient and resigning on account of low standing..	21+	18-	16+	0	0	18-
Average standing of those proficient	30+	41+	47+	67	53	

HEALTH.

The health of cadets and the command generally throughout the year has been very good. Influenza was the only prevalent disease. During the unusually severe winter it affected a large proportion of the population, but fortunately without serious results. In the spring five cases of typhoid fever appeared among cadets following each other in quick succession. They were probably due to a common cause in the cadet mess which has not been definitely determined. As suspicion was directed upon the milk, with which cadets are very liberally supplied, the source of supply was immediately changed and the milk obtained from a new locality, the dairies being carefully selected and inspected and a thorough sterilization of their cans insisted upon. As a further precaution all milk has since been pasteurized before being served. On account of the large quantity of milk cadets consume and to avoid all danger in the future from this source, a contract covering a period of eight years has been entered into which will insure a pure supply as far as it is possible to attain one.

The efforts inaugurated last year to combat malarial fever by destroying mosquitoes have been continued without relaxation and with excellent results. No cases of this fever have occurred so far this summer. Attention is invited to the appended report of the post surgeon. His recommendations are approved and will be carried out as far as it is practicable to do so.

DISCIPLINE.

The discipline of cadets, as manifested in their conduct and at drill and in military exercises and attention to duty, is satisfactory. There has been no relaxation of the efforts made to enforce the regulations concerning hazing, and it is a pleasure to state that no departures worthy of notice from the spirit of these regulations have occurred during the past summer.

PRACTICAL MILITARY INSTRUCTION.

For the programme followed in this training attention is invited to the appended reports of the commandant of cadets and the instructor of practical military engineering. The instruction has continued along the lines mentioned in previous reports, every effort being made to improve in every practicable way the military training of cadets and their grounding in the elements of surveying, topography, reconnaissance, and field engineering.

CADET ALLOWANCES AND SUPPLIES.

I desire to invite attention to certain charges made against the pay of cadets which I believe should be borne by the Government. A cadet's pay is his only income; he is not permitted to augment it from outside sources; out of it he pays the entire cost of his maintenance (except the actual heating of the buildings he occupies), namely, for his food, its service, and preparation; his clothing, text-books, laundry, social amusements, athletic games, literary societies; his expenses going to and coming from his home on furlough, etc.; the expenses of cleaning barracks, maintenance of baths, renewal of the plain furniture permitted in his room, and the gas used in lighting barracks. It is the expense of the items last mentioned which I believe should be met by the Government. This is usual in all public buildings. The cost for these to the individual cadet is approximately \$21 per year, and if he could be relieved from it and the amount added to that already reserved for his equipment after graduation, a great gain would be made. Although the amount now reserved for final equipment has recently been increased, it is still insufficient to enable the graduated cadet to enter his career free of debt, which, from every point of view, it is most desirable that he should do.

Gratifying results have attended the efforts of the commandant to enforce upon cadets rigid economy in the purchase of their supplies. These results are shown in the appended report of the treasurer and quartermaster and commissary of cadets, to which attention is asked. The supplies of clothing and other articles provided during the year have been ample and of excellent quality. The food furnished is also all that can be rightly desired. The addition of the large and modern kitchen, which is equipped with labor-saving devices for cooking, is a factor which has greatly benefited the mess. Although all the staple articles of food, with the exception of coffee and sugar, have been maintained at the high prices of the last few years, the better facilities incorporated in the mess building for handling and preparing food, together with the assiduous attention and earnest efforts of the quartermaster and commissary of cadets, who is the caterer, have consider-

ably reduced the cost of living, the subsistence this year averaging 53.85 cents per cadet per day as against 59.3 cents for last year, making a total reduction in the cost of board of \$19.80 per cadet per annum.

ACADEMIC MATTERS.

The policy of sending the first class to Gettysburg to study that battlefield in connection with their course in the art of war was again followed this year. The manifest good results of thus supplementing theoretical study with practical experience by visits of this character led to their extension to two other departments. As an adjunct to the course in ordnance and gunnery, the first class made two visits as follows:

On January 17 to the Army Gun Factory at Watervliet Arsenal, N. Y., and on May 2 to the ordnance proving ground at Sandy Hook, New Jersey. These visits were so timed that the practical experience was as nearly as possible coincident with the theoretical instruction along the same lines. The instructor of ordnance and gunnery in his report regarding these visits states:

I am of opinion that the value of these visits to the cadets can not be overestimated. They have had experiences which have made an indelible impression on their minds and which are part of the information a well-educated officer should possess; their horizon has been broadened and the theoretical lessons have been fixed as a part of their permanent knowledge in a way that no amount of explanation or illustration could accomplish. Each cadet was required after the visit to submit a report of his observations, prepared without assistance. These reports were especially satisfactory and showed much interest, power of observation and expression, and facility of analysis. I can not recommend too strongly that similar visits be made by each succeeding first class.

In view of the most excellent results obtained by the visits to the Sandy Hook proving grounds and Watervliet Arsenal, the recommendations made in previous reports that a modern seacoast fort, with its accessories, be established at the academy, are not renewed; but in place, it is recommended that a battery commander's position-finder station, completely equipped with depression position finder, etc., and with electrical communications to the present battery, be installed. This installation can be accomplished at a small expenditure and will enable effective instruction to be given in technical work which young officers entering the service from the academy are frequently called upon to perform. The practice in the use of lines of communication and in maintaining them will be a valuable one for any officer, whatever branch of the service he may enter.

In connection with the second class course in drawing, that class visited the Metropolitan Museum of Art in New York City on May 11, 1903, under charge of the professor of drawing and his assistants. The necessary expenses connected with this visit were borne by the cadets themselves. From an educational standpoint, the returns were well worth the expenditure of the time and money in placing before these cadets, in many cases for the first time, a comprehensive collection of the world's best productions in art.

The changes in the curriculum, which were fully outlined in my report of last year, took effect on September 1, 1902, and it is believed that every change then made has been a beneficial one. Further revision is, however, necessary and is under consideration. I believe it essential that cadets should have a short course in logic; and pro-

vision for such, I hope, can be made in the time now allotted to English. Instruction in Spanish is at present given in the third class course, and as a speaking knowledge of this language is now of such great importance for our officers, either provision should be made to keep the language fresh in the minds of cadets until graduation or changes in the curriculum should be made to enable instruction in it to be given in the last or graduating year.

In connection with the study of French and Spanish, I have the honor to renew my previous recommendation that the Secretary of War recommend to Congress that provision be made for the employment of three assistant instructors in the department of modern languages to be civilians, natives of the countries where the languages are spoken—two for Spanish and one for French. A conversational knowledge of both is, of course, very difficult to acquire in the class room. Although great attention is given to this phase of the study of these languages, I have no doubt that the ability of the graduate to speak both would be greatly increased if the instructors and cadets heard them spoken more in the class rooms. Native instructors would not, of course, have the same military control over a section of cadets that an officer would have, but they would be extremely useful, first, as a guide for the officers who act as instructors, and then to teach special sections or take each section in turn a short time in order to verify the correctness of work done and to increase the interest of the cadets in the subject. The good results it is manifest would follow the employment of such assistants are certainly sufficient to justify the expense of employing them.

Regarding the arrangement of hours, tentative plans begun with the present academic year, September 1, 1903, effect an equal division of hours from 8 a. m. to 1 p. m. between the departments of chemistry and philosophy in the second class course, each department having three periods of one and one-fourth hours each. The morning hour belonging to the department of tactics was transferred to the afternoon. In the first-class course three periods of recitation in ordnance and gunnery of one hour each from 10 a. m. to 1 p. m. have taken the place of the former hours. The result of these alterations in the hours of recitation makes no change in the number of hours which each cadet spends in the section room, but increases materially the time which an instructor can devote to each cadet.

The course in military hygiene, comprising twenty lectures given by the surgeon to each half of the second class, was carried out this year for the first time. The lectures were so arranged as to cover well the essential matters of this important subject. They were followed with interest and profit by the class.

THE LIBRARY.

This very important department is fully meeting the expectations regarding its value in the education of cadets and its usefulness in other respects, which were expressed in the efforts made to secure its reorganization. The appended report of the Librarian gives a synopsis of the work it has accomplished during the past year, and attention is invited to it. The library still lacks many essentials to complete its equipment of books and similar accessories, but with a continuance of the liberal treatment Congress has given it during the past two years these difficulties will be quickly overcome.

BUILDINGS AND GROUNDS.

The appended reports of the quartermaster and instructor of practical military engineering give in detail the many improvements made and the large amount of work accomplished during the year. Of important improvements, not included in the plans of enlargement, the south wing of the cadet hospital and the addition to the cadet mess are still unfinished. Work on both has been delayed by the failure of the contractor to whom it was awarded. Rapid progress, however, is now being made and these improvements will be completed at an early date. The cadet mess when finished, it is believed, will be a model of its kind in the practicability of its arrangement for the proper preparation and service of food. The completion of the officers' mess building adds an important structure to those already existing at West Point and fills a long standing want.

The preliminary preparations for giving effect to the act of Congress of June 28, 1902, providing an adequate plant for the Military Academy have been most satisfactorily completed. The Secretary of War gave his careful personal attention to this matter, and, under his instructions, ten firms of architects of established reputation, from the country at large, were invited to submit in competition preliminary general plans showing a proposed arrangement of the buildings and treatment of the grounds to meet the various requirements of the academy, together with an indication of the architectural treatment of the separate buildings. The conditions governing the competition are set forth in full in Appendix I, hereto. The result has been the securing of a plan of improvement which, it is believed, will receive very general approval. The plan meets the practical requirements of the academy and will harmonize with the character of the landscape; historic associations are preserved by the retention of the important old buildings with which the new will accord, the whole making a satisfactory and complete plan; finally, the plan is one that can be constructed with economy. The act under which these improvements are to be made requires the complete plan to be approved by the Secretary of War before any buildings can be begun. This requirement will entail much delay in beginning actual work. In view of the overcrowded condition of cadet barracks and the limitations of necessary training by the inadequateness of several existing buildings, it is hoped Congress will, when the matter is presented, so change its action as to permit the Secretary of War, after approving a general plan, to proceed with the construction of buildings as he may see fit.

Mention should be made of an interesting and important work recently inaugurated, having for its object the proper management of the forest lands of the reservation, comprising approximately 2,000 acres. The forests are at present in poor condition, no systematic plan up to this time having been followed to care for them or to promote the growth of desirable varieties of trees and prevent damage from fires. With the approval of the War Department, and under the general direction of Mr. Gifford Pinchot, of the Bureau of Forestry, Department of Agriculture, a working plan of management is now being prepared. Preliminary work to this end was done during the spring by Profs. Henry S. Graves and Royal Marston, assisted by the senior class of the Yale forestry school. The working plan will include an accurate statement of the existing species of trees, the rate

of growth of the most important varieties, with advice for their management and recommendations for protection from fires and other dangers. When the plan is systematically followed, not only will our woodlands be improved and made more attractive, but their productiveness as watersheds and in firewood will be greatly increased. The example of practicing forestry here should influence other owners of forest lands to similar efforts.

The acquisition, under authority given in the last Military Academy appropriation bill, of the Dassori tract of land, comprising about 220 acres, adds a very desirable extension to the southern part of the reservation. It will be a wise policy, I believe, to acquire property, when it can be had at a fair value, so that ultimately the Government lands may extend to the natural southern boundary, the Highland Falls Brook.

Attention is invited to the reports of the quartermaster and disbursing officer, the ordnance officer, and the engineer officer, which are hereto appended.

ESTIMATES.

The estimates for the next fiscal year are forwarded with this report. They have been carefully prepared, and the necessity for the few new items is fully explained in the remarks following them. It is hoped all will meet with approval. Especial attention is invited to the item for maintaining the children's school. The object of this is to put this school upon a basis to enable it to provide at least the foundation of a common school education for the many children—mostly of soldiers—residing here. The conditions at West Point are such that there must always be many young children among its residents. The place is isolated, and especially in winter the difficulties of access to neighboring towns are so great that a school is a necessity. The existing one is unsatisfactory, and contrasted with the educational work in the Academy itself, it is the subject of just criticism by that part of the public aware of the situation. The teachers are soldiers, and the building occupied is one devoid of proper fixtures and of the simplest educational aids, or of any of the equipment required to make a school the attractive place it should always be. Using soldiers to teach children is objectionable. They seriously cripple the military organization from which they are taken, and the saving made in using them is hardly appreciable, as their actual cost closely approximates the amount necessary to obtain trained teachers. Men are not suitable to teach small children; women should be employed for the purpose—a principle recognized in all civil communities.

Due to the existing poor facilities, many children have been attending the public school in the nearby village of Highland Falls. The authorities there complain of this and object to the burden it imposes upon the village. I feel that the responsibility for this school work is largely upon the Government, and that it should assume the burden as a matter of right and justice.

The estimate providing for an increased water supply is based upon the report of a board of especially experienced officers, who have made a most thorough investigation of this important and pressing subject. The recommendation of the board has already received the approval of the Secretary of War, and it is hoped Congress will also act favorably in the matter.

In conclusion, I have the honor to express deep appreciation for the aid and support I have received during the year from all the officers on duty at the Academy and from the War Department.

Very respectfully,

A. L. MILLS,

Colonel, U. S. Army, Superintendent.

The ADJUTANT-GENERAL UNITED STATES ARMY,

Washington, D. C.

List of appendices.

- Appendix A.—Roster of officers and troops.
- Appendix B.—Report of the commandant of cadets.
- Appendix C.—Report of the instructor of practical military engineering.
- Appendix D.—Report of the treasurer, quartermaster, and commissary of cadets.
- Appendix E.—Report of the surgeon.
- Appendix F.—Report of the quartermaster and disbursing officer.
- Appendix G.—Report of the instructor of ordnance and gunnery.
- Appendix H.—Report of the librarian.
- Appendix I.—Rules governing architectural competition.

APPENDIX A.

ROSTER OF OFFICERS AND TROOPS.

SUPERINTENDENT.

Col. Albert L. Mills, Captain First Cavalry.

MILITARY STAFF.

Capt. Frank W. Coe, Artillery Corps, Adjutant of the Military Academy and of the post; recruiting officer.

Maj. John M. Carson, jr., quartermaster, quartermaster of the Military Academy and of the post; disbursing officer.

Capt. John M. Jenkins, Fifth Cavalry, commissary, and in charge of post exchange.

Capt. Thomas Franklin, commissary, treasurer of the Military Academy, and quartermaster and commissary of cadets.

Capt. Edward L. King, Second Cavalry, assistant to quartermaster.

Lieut. Col. Valery Havard, deputy surgeon-general, U. S. Army, surgeon.

Capt. Alexander N. Stark, assistant surgeon, U. S. Army.

Capt. Albert E. Truby, assistant surgeon, U. S. Army.

First Lieut. Theodore C. Lyster, assistant surgeon. U. S. Army.

Capt. Dennis E. Nolan, Thirtieth Infantry.^a

ACADEMIC STAFF.

Professors whose service at the academy, as professor, exceeds ten years, have the rank, pay, and allowances of colonel, and all other professors the rank, pay, and allowances of lieutenant-colonel.

DEPARTMENT OF TACTICS.

Lieut. Col. Charles G. Treat, captain Artillery Corps, commandant of cadets and instructor of tactics. (June 15, 1901.)

Capt. James K. Thompson, Fifteenth Infantry, senior instructor of infantry tactics, commanding company of cadets.

Capt. Edwin St. J. Greble, Artillery Corps, senior instructor of artillery tactics.

Capt. Godfrey H. Macdonald, Tenth Cavalry, senior instructor of cavalry tactics.

Capt. Fred W. Sladen, Fourteenth Infantry, assistant instructor of tactics, commanding company of cadets.

Capt. Lincoln C. Andrews, Fifteenth Cavalry, assistant instructor of tactics, commanding company of cadets.

Capt. Henry L. Newbold, Artillery Corps, assistant instructor of tactics, commanding company of cadets.

Capt. Robert C. Davis, Seventeenth Infantry, assistant instructor of tactics, commanding company of cadets.

Capt. Charles W. Exton, Twentieth Infantry, assistant instructor of tactics.^b

First Lieut. Herman J. Koehler, U. S. Army, instructor of military gymnastics and physical culture.

Second Lieut. Herman Glade, Fourth Infantry, assistant instructor of tactics and gymnastics, commanding company of cadets.

^a To be relieved.

^b Not yet joined.

SUPERINTENDENT UNITED STATES MILITARY ACADEMY. 43

DEPARTMENT OF CIVIL AND MILITARY ENGINEERING.

Gustav J. Fiebeger, lieutenant-colonel, U. S. Army, professor. (May 4, 1896.)
Capt. James P. Jerve, Corps of Engineers, assistant professor.
First Lieut. William D. Connor, Corps of Engineers, instructor.
First Lieut. Frederick W. Altstaetter, Corps of Engineers, instructor.
First Lieut. Harley B. Ferguson, Corps of Engineers, instructor.
First Lieut. James A. Woodruff, Corps of Engineers, instructor.

DEPARTMENT OF NATURAL AND EXPERIMENTAL PHILOSOPHY.

William B. Gordon, lieutenant-colonel, U. S. Army, professor. (March 27, 1901.)
Capt. Cornélis DeW. Willcox, Artillery Corps, assistant professor.
Capt. Palmer E. Pierce, Thirteenth Infantry, instructor.
Capt. William G. Sills, First Cavalry, instructor.
Capt. Johnson Hagood, Artillery Corps, instructor.
First Lieut. Charles M. Wesson, Eighth Cavalry, instructor.

DEPARTMENT OF MATHEMATICS.

Wright P. Edgerton, lieutenant-colonel, U. S. Army, professor. (October 7, 1898.)
Charles P. Echols, captain, U. S. Army, associate professor. (October 7, 1898.)
Capt. George Blakely, Artillery Corps, assistant professor.
Capt. William R. Smith, Artillery Corps, instructor.
Capt. Mortimer O. Bigelow, Eighth Cavalry, instructor.
Capt. John E. Stephens, Artillery Corps, instructor.
Capt. John K. Moore, Fifteenth Infantry, instructor.
Capt. Claude H. Miller, Twenty-fourth Infantry, instructor.
First Lieut. Lytle Brown, Corps of Engineers, instructor.
First Lieut. Leon B. Kromer, Eleventh Cavalry,^a instructor.
First Lieut. Joseph A. Baer, Sixth Cavalry, instructor.
First Lieut. Frank O. Whitlock, Fourteenth Cavalry, instructor.
First Lieut. Fred H. Gallup, Artillery Corps, instructor.

DEPARTMENT OF CHEMISTRY, MINERALOGY, AND GEOLOGY.

Samuel E. Tillman, colonel, U. S. Army, professor. (December 21, 1880.)
Capt. Richmond P. Davis, Artillery Corps, assistant professor.
Capt. John McA. Palmer, Fifteenth Infantry, instructor.
Capt. Paul B. Malone, Twenty-seventh Infantry, instructor.
Capt. Louis M. Nuttman, Ninth Infantry, instructor.
Capt. Albert J. Bowley, Artillery Corps, instructor.
Second Lieut. William R. Bettison, Artillery Corps, instructor.

DEPARTMENT OF DRAWING.

Charles W. Larned, colonel, U. S. Army, professor. (July 25, 1876.)
Capt. Charles B. Hagadorn, Twenty-third Infantry, assistant professor.
Capt. Harold Hammond, Twenty-third Infantry, instructor.
Capt. Chauncey B. Humphrey, Twenty-second Infantry, instructor.
Capt. Henry C. Smither, Fifteenth Cavalry, instructor.
First Lieut. George B. Comly, Third Cavalry, instructor.
First Lieut. Frank C. Jewell, Artillery Corps,^b instructor.

DEPARTMENT OF MODERN LANGUAGES.

Edward E. Wood, colonel, U. S. Army, professor. (October 1, 1892.)
Capt. William Kelly, jr., Ninth Cavalry, associate professor. (July 1, 1903.)
Capt. J. F. Reynolds Landis, First Cavalry, assistant professor of the French language.
Capt. Thomas G. Hanson, Nineteenth Infantry, assistant professor of the Spanish language.
Capt. Peter E. Traub, Fifth Cavalry, instructor.
Capt. William Newman, First Infantry, instructor.
Capt. Americus Mitchell, Fifth Infantry, instructor.
Capt. Albert E. Saxton, Eighth Cavalry, instructor.
Capt. William S. Guignard, Artillery Corps, instructor.

^a Not yet joined.

^b To be relieved September 5, 1903.

44 SUPERINTENDENT UNITED STATES MILITARY ACADEMY.

Capt. Bertram C. Gilbert, Artillery Corps, instructor.
Capt. Harvey W. Miller, Thirteenth Infantry, instructor.
First Lieut. Robt. E. Wood, Third Cavalry, instructor.
Second Lieut. Frank P. Lahm, Sixth Cavalry, instructor.

DEPARTMENT OF LAW AND HISTORY.

Edgar S. Dudley, lieutenant-colonel and judge-advocate, professor. (July 31, 1901.)
(By assignment under act 6 June, 1874.)
Capt. Daniel G. Berry, Twenty-second Infantry, assistant professor.
Capt. Pierce A. Murphy, First Cavalry, instructor.
First Lieut. Irvin L. Hunt, Nineteenth Infantry, instructor.
First Lieut. Samuel T. Ansell, Eleventh Infantry, instructor.
First Lieut. Halsey E. Yates, Fifth Infantry, instructor.
First Lieut. Edwin G. Davis, Artillery Corps, instructor.
Second Lieut. Edward Canfield, jr., Artillery Corps, instructor.

DEPARTMENT OF PRACTICAL MILITARY ENGINEERING, MILITARY SIGNALING, AND TELEGRAPHY.

Capt. Mason M. Patrick, Corps of Engineers, instructor. (August 31, 1903.)
First Lieut. Michael J. McDonough, Corps of Engineers, senior assistant instructor.

DEPARTMENT OF ORDNANCE AND GUNNERY.

Maj. Frank E. Hobbs, Ordnance Department, instructor. (August 15, 1900.)
Capt. Jens Bugge, Twenty-eighth Infantry, senior assistant instructor.
Capt. Gordon G. Heiner, Artillery Corps, assistant instructor.
Capt. Joseph Wheeler, jr., Artillery Corps, assistant instructor.

LIBRARIAN.

Edward S. Holden, M. A., Sc. D., LL. D. (July 1, 1902.)

CHAPLAIN.

Rev. Herbert Shipman. (Reappointed April 22, 1900.) (April 22, 1896.)

CONTRACT DENTAL SURGEON.

Dr. John H. Hess.

TEACHER OF MUSIC.

George Essigke. (October 15, 1895.)

TROOPS.

BATTALION OF CADETS.

Lieut. Col. Charles G. Treat, captain Artillery Corps, commanding.

DETACHMENT OF HOSPITAL CORPS.

Lieut. Col. Valery Havard, deputy surgeon-general, commanding.
Capt. Alexander N. Stark, assistant surgeon.
Capt. Albert E. Truby, assistant surgeon.
First Lieut. Theodore C. Lyster, assistant surgeon.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ARMY SERVICE MEN.

Maj. John M. Carson, jr., quartermaster, commanding.
Capt. Edward L. King, Second Cavalry.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ENGINEERS.

Capt. Mason M. Patrick, Corps of Engineers, commanding.
First Lieut. James A. Woodruff, Corps of Engineers.
First Lieut. Michael J. McDonough, Corps of Engineers.

UNITED STATES MILITARY ACADEMY DETACHMENT OF ORDNANCE.

Maj. Frank E. Hobbs, Ordnance Department, commanding.

UNITED STATES MILITARY ACADEMY DETACHMENT OF CAVALRY.

Capt. Godfrey H. Macdonald, Tenth Cavalry, commanding.

SUPERINTENDENT UNITED STATES MILITARY ACADEMY. 45

UNITED STATES MILITARY ACADEMY DETACHMENT OF ARTILLERY.

Capt. Edwin St. J. Greble, Artillery Corps, commanding.

UNITED STATES MILITARY ACADEMY BAND AND DETACHMENT OF FIELD MUSIC.

Capt. Frank W. Coe, Artillery Corps, commanding.

List of officers at the United States Military Academy.

Names.	Corps or regiment.	On duty at academy since—
Col. Albert L. Mills	Superintendent, captain, First Cavalry.....	Sept. 20, 1898
PROFESSORS.		
Larned, Charles W.	Professor (July 25, 1876)	Aug. 28, 1874
Tillman, Samuel E.	Professor (Dec. 21, 1880)	Aug. 28, 1879
Wood, Edward E.	Professor (Oct. 1, 1892)	Aug. 28, 1889
Fieberger, Gustav J.	Professor (May 4, 1896)	May 30, 1896
Edgerton, Wright P.	Professor (Oct. 7, 1898)	Jan. 28, 1889
Gordon, William B.	Professor (Mar. 27, 1901)	May 2, 1901
LIEUTENANT-COLONELS.		
Dudley, Edgar S.	Lieutenant-colonel and judge-advocate, professor (July 31, 1901).	July 31, 1901
Treat, Charles G.	Commandant of cadets, captain, Artillery Corps, (June 15, 1901).	Aug. 31, 1900
Havard, Valery	Lieutenant-colonel and deputy surgeon-general ...	Nov. 17, 1902
MAJORS.		
Carson, John M., jr.	Quartermaster	July 8, 1903
Hobbs, Frank E.	Ordnance Department	Aug. 15, 1900
CHAPLAIN.		
Shipman, Rev. Herbert	Chaplain	Apr. 25, 1896
ASSOCIATE PROFESSORS.		
Echols, Charles P.	Associate professor (Oct. 7, 1898)	Dec. 27, 1898
Kelly, William, jr.	Captain, Ninth Cavalry	Oct. 19, 1898
CAPTAINS.		
Stark, Alexander M.	Assistant surgeon	Jan. 6, 1902
Patrick, Mason M.	Corps of Engineers	Aug. 31, 1903
Landis, J. F. Reynolds.	First Cavalry	Aug. 21, 1900
Thompson, James K.	Fifteenth Infantry	July 8, 1900
Greble, Edwin St. J.	Artillery Corps	June 15, 1901
Macdonald, Godfrey H.	Tenth Cavalry	Aug. 20, 1902
Hanson, Thomas G.	Nineteenth Infantry	Aug. 20, 1901
Hagadorn, Charles B.	Twenty-third Infantry	Aug. 20, 1902
Sladen, Fred W.	Fourteenth Infantry	Aug. 28, 1900
Willcox, Cornelis De W.	Artillery Corps	Aug. 21, 1900
Pierce, Palmer E.	Thirteenth Infantry	Nov. 8, 1901
Traub, Peter E.	Fifth Cavalry	Oct. 20, 1902
Davis, Richmond P.	Artillery Corps	Aug. 29, 1898
Jenkins, John M.	Fifth Cavalry	Aug. 21, 1900
Palmer, John McA.	Fifteenth Infantry	Aug. 27, 1901
Newman, William	First Infantry	Aug. 20, 1903
Malone, Paul B.	Twenty-seventh Infantry	Aug. 4, 1901
Bugge, Jens	Twenty-eighth infantry	Aug. 20, 1903
Mitchell, Americus	Fifth Infantry	Do.
Andrews, Lincoln C.	Fifteenth Cavalry	June 30, 1903
Franklin, Thomas	Subsistence Department	Jan. 8, 1902
Nuttman, Louis M.	Ninth Infantry	Jan. 31, 1903
Saxton, Albert E.	Eighth Cavalry	Aug. 21, 1900
Jervay, James P.	Corps of Engineers	Jan. 4, 1899
Blakely, George	Artillery Corps	Jan. 24, 1903
Coe, Frank W.	do.	July 2, 1903
Smith, Wm. R.	do.	Feb. 14, 1903
Bigelow, Mortimer O.	Eighth Cavalry	Aug. 20, 1901
Heiner, Gordon G.	Artillery Corps	Aug. 21, 1900
Wheeler, Joseph, jr.	do.	Aug. 20, 1902
Nolan, Dennis E. a	Thirtieth Infantry	Aug. 28, 1901
Sills, William G.	First Cavalry	Aug. 21, 1900
Guignard, William S.	Artillery Corps	Jan. 7, 1901
Hagood, Johnson	do.	Aug. 20, 1901
Bowley, Albert J.	do.	Do.
Gilbert, Bertram C.	do.	Aug. 21, 1900

a To be relieved.

46 SUPERINTENDENT UNITED STATES MILITARY ACADEMY.

List of officers at the United States Military Academy—Continued.

Names.	Corps or regiment.	On duty at academy since—
CAPTAINS—continued.		
Stephens, John E.	Artillery Corps.	Aug. 21, 1900
Newbold, Henry L.	do.	Aug. 20, 1903
Moore, John K.	Fifteenth Infantry.	Aug. 27, 1902
Miller, Claude H.	Twenty-fourth Infantry.	Aug. 28, 1902
King, Edward L.	Second Cavalry.	July 24, 1903
Miller, Harvey W.	Thirteenth Infantry.	Aug. 25, 1902
Berry, Daniel G.	Twenty-second Infantry.	Aug. 29, 1900
Hammond, Harold.	Twenty-third Infantry.	Aug. 20, 1902
Davis, Robert C.	Seventeenth Infantry.	Aug. 10, 1901
Exton, Charles W. a.	Twentieth Infantry.	
Humphrey, Chauncey B.	Twenty-second Infantry.	Oct. 18, 1901
Murphy, Pierce A.	First Cavalry.	Aug. 21, 1900
Smithers, Henry C.	Fifteenth Cavalry.	Do.
Truby, Albert E.	Assistant surgeon.	Dec. 1, 1902
FIRST LIEUTENANTS.		
Connor, William D.	Corps of Engineers.	Aug. 20, 1903
Altstaetter, Frederick W.	do.	Aug. 20, 1902
Ferguson, Harley B.	do.	Aug. 20, 1903
Hunt, Irvin L.	Nineteenth Infantry.	Aug. 1, 1903
Ansell, Samuel T.	Eleventh Infantry.	Aug. 20, 1902
Yates, Halsey E.	Fifth Infantry.	Do.
Lyster, Theodore C.	Assistant surgeon.	Aug. 8, 1903
Brown, Lytle.	Corps of Engineers.	Jan. 12, 1903
Woodruff, James A.	do.	Aug. 20, 1903
Kromer, Leon B. a.	Eleventh Cavalry.	
Baer, Joseph A.	Sixth Cavalry.	Do.
Whitlock, Frank O.	Fourteenth Cavalry.	Do.
Wood, Robert E.	Third Cavalry.	Do.
Wesson, Charles M.	Eighth Cavalry.	Do.
Comly, George B.	Third Cavalry.	Do.
Kochler, Herman J.	Instructor of military gymnastics and physical culture.	Feb. 1, 1885
McDonough, Michael J.	Corps of Engineers.	Apr. 17, 1903
Gallup, Fred H.	Artillery Corps.	Aug. 31, 1903
Davis, Edwin G.	do.	Aug. 20, 1903
Jewell, Frank C. b.	do.	Aug. 20, 1901
SECOND LIEUTENANTS.		
Glade, Herman.	Fourth Infantry.	Mar. 14, 1902
Canfield, Edward, jr.	Artillery Corps.	Aug. 20, 1903
Lahm, Frank P.	Sixth Cavalry.	Do.
Bettison, William R.	Artillery Corps.	Do.

a Not yet joined.

b To be relieved Sept. 5, 1903.

F. W. COE,
Captain, Artillery Corps, Adjutant.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 1, 1903.

APPENDIX B.

REPORT OF THE COMMANDANT OF CADETS.

WEST POINT, N. Y., *July 20, 1903.*

SIR: In obedience to Circular No. 15, Headquarters United States Military Academy, dated April 14, 1903, I have the honor to submit the following report:

The programme of practical military instruction in the department of tactics for the year is appended. The changes from that of last year, caused by the increased numbers to be instructed, and also by endeavors to progress and improve upon former methods where opportunity offered, are briefly as follows:

In infantry, having perfected close order drill, increased attention has been paid to the use of infantry in the field in attack and defense of position, reconnaissance work, preparation of maps and all details giving actual experience with the conditions that would prevail in actual service.

In cavalry it has been found necessary to begin instruction of the third class during the summer encampment. This instruction begins at the most elementary, starting with teaching them to halter, bridle, saddle, and how to approach and handle their horse understandingly. This preliminary exercise is given in the open air on pleasant days and in the hall on rainy days, and using the most docile and quiet mounts. Careful endeavor is made, first, to give the rider confidence, and gradually by mounting him, using the blanket and surcingle only, to give him the proper seat and balance. In addition to the regular cavalry instruction of the first class, a careful and progressive course of instruction in the methods of riding over obstacles has been given in the outdoor riding ring equipped for that purpose. Quiet and regularly gaited horses only are used, and the horse is used without bit or bridle. The cadets are mounted bareback with the blanket and surcingle, and lastly with the saddles.

The obstacles are not severe, and the horse is unhampered in his movements by being punished, or by fear of punishment from unintended jerks on the reins, or by the efforts of the rider to gain support by using the reins. In short, the best horses are selected to teach the men. With this theory and along these lines progress has been most rapid and satisfactory, as evidenced by the conduct of all the mounts in their willingness to take hurdles or jumps in the hall and not to refuse or go out of their stride, and also in the riders in the ease and grace with which they are able to sit the horse in jumping obstacles and not unnecessarily interfere with him through the means of the bridle. The voluntary riding, for which opportunity has been given to cadets to enjoy, either by riding on the road or during release from quarters to practice at polo or other mounted exercises, has been of the utmost benefit, not only in improving the horsemanship of the cadets, but also to stimulate their interest in the horse and consideration for his proper care.

In the light artillery instruction the advancement made has been marked. Opportunity to extend instruction from that of simple cannoneers to that of the duties of driver has been of the utmost benefit, not only as an increased instruction in riding, but also as a necessary instruction to an officer looking toward his proper training as an officer of light artillery. This year for the first time the exhibition drill of the light battery before the Board of Visitors was made using cadets alone both as drivers and as cannoneers. The road marches made by the artillery over rocky roads and across ravines, the target practice in the mountains, the instruction in harnessing and unharnessing and adjustment of the harness in the field, the methods of going into camp and picketing the horses, and the use of the field ovens in the preparation of meals, used whenever opportunity offered—all these features, it is believed, have been of great benefit as a matter of instruction.

Instruction in pack-train service and mountain artillery has been continued as usual. Instruction in target practice has been improved and increased, taking advantage of all spare time and every opportunity for increased instruction. Under the new order for target practice and of the authority of the War Department, cadets

are allowed to be rated according to the scores made under prescribed conditions, except that the same time limit for qualification is not prescribed, as that could not be exacted, owing to conditions prevailing at the Military Academy. Increased interest is shown and marked improvement in marksmanship. Instruction in target practice is begun within two weeks after the new cadet reports, and is thorough and progressive.

Instruction in coast artillery is necessarily limited owing to the lack of facilities. The method of loading, range finding, and fire control is explained and carefully illustrated. Owing to the fact that a number of graduates leave here and go to different branches of the service where properly equipped seacoast fortifications probably can not be seen, I recommend that the first class be allowed to visit for one or two days some well-equipped seacoast fort in the vicinity, say Fort Wadsworth, where target practice under service conditions can be witnessed.

The living accommodations—barrack room of cadets—were insufficient and for the coming winter the conditions will be still more unsatisfactory owing to overcrowding. At present there are 459 cadets on the rolls, and between 40 and 50 more are expected the latter part of July. This number will require almost every cadet, except members of the first class, to live three in a room. This condition has been found to be unsatisfactory both for comfort and sanitary reasons, and also as a hindrance to the cadet in his academic work. I earnestly recommend that a temporary building be erected on the high ground directly in the rear of barracks, connected with the area by a broad stairway, which will accommodate 80 to 100 men, and thus relieve the congestion.

The supplies furnished cadets have been satisfactory. Since the time the commandant of cadets was authorized to regulate the amount of supplies furnished cadets, I have given careful personal attention to each requisition with very satisfactory results, my object being to limit the allowances of cadets in debt to necessities and preventing the purchase of supplies in unnecessarily large quantities at one time, which, I believe, encourages extravagance. On December 31, 1901, the Corps of Cadets as a body was in debt to the cadet store, \$22,600.40. The aggregate amount of credit of the few cadets not in debt was \$1,073.14. On April 30, 1903, after fifteen months, the aggregate indebtedness of cadets to the cadet store was \$828.02; the aggregate credit of cadets, \$17,841.16, showing a savings in fifteen months of \$38,540.46. I have received the cooperation of the cadets themselves in my endeavors to decrease their indebtedness, and I believe, with care and fair economy, every cadet after his first year's service should be out of debt, and I earnestly recommend that no cadet be allowed to go on leave or expend funds for his enjoyment when he has not a sufficient amount to his credit to meet expenses. I believe, also, with care and economy, that each graduate with the \$384 which is deposited to his credit for equipment fund, together with the amount he may be able to have to his credit from proper care of his clothing and supplies, will be enabled to go into the service absolutely free from debt. Under present conditions, I do not believe, except in case of emergency, that any young officer should have a debt of any nature. I believe that this is one of the most important principles to inculcate in the army officer, and here is the place for him to learn it.

The discipline of the academy has been good. Careful endeavor has been made to instill in every cadet the impulse to do duty for duty's sake. Increased responsibility has been given cadet officers, with instructions to exercise the functions of their office at proper times, whether on or off duty or in or out of ranks. I believe that by careful development of this principle respect for office and authority will be increased in the cadets as a whole, and that by limiting authority over new cadets entirely to cadet officers or those ordered to do duty as such will be the quickest and surest of means of wiping out old methods of improper and undue interference with new cadets by cadets having no authority over them.

I repeat my recommendation that provision be made for increased time in the physical training and development of the fourth class and also for an opportunity to give a few minutes daily, or at least every other day, for the setting-up drill and physical exercise of the upper classes. Investigation shows that a cadet after completing his first year here is in his best physical condition, and except in individual cases, where a man by his own efforts maintains his condition, they gradually fall off in their physical condition. I believe it is important that this training should be continued throughout the four years' course. I am earnestly supported in this recommendation by the senior instructor in athletics.

Fencing has continued as usual, and the team representing the United States Military Academy was again successful at the intercollegiate tournament. I repeat my recommendation that authority be requested to employ, by contract, a competent assistant instructor in fencing, and also in riding and equitation.

Proper sports of all kinds have been encouraged and opportunity been given for their enjoyment, which in all cases, I believe, have been beneficial to the cadets both mentally and physically.

Investigations have been held from time to time under paragraph 125 of the Regulations, and during the present year no instances have been developed showing any cases of hazing or organized fights.

I earnestly recommend that in the contemplated rearrangement of schedule more time be made available to the department of tactics for instruction of the second and third classes in riding.

The present second class numbers 117 members; and two hours four times a week, with the riding hall only large enough to accommodate 30 men, gives each man but two hours' instruction a week, actually only about ninety minutes (taking out time of getting to and from the riding hall), and this in connection with the fact that with 30 men in the squad the time the instructor has to devote to the individual is utterly inadequate to proper careful personal supervision.

With a large third class the conditions will be equally difficult for satisfactory instruction and progress.

During the present encampment, as well as during the camp one year ago, I have endeavored to give as much preliminary instruction in the elementary work as practicable.

To accomplish regular and progressive advancement in proficiency it will be endeavored by transfer between riding sections to stimulate interest and promote uniformity of instruction.

I have received the willing and active cooperation of all officers serving with me in the department of tactics in the performance of my duties, and to their assistance is due, to a great extent, whatever of value has been accomplished in the care and training of cadets.

Very respectfully,

CHAS. G. TREAT,
Lieutenant-Colonel, U. S. Army, Commandant of Cadets.

The ADJUTANT UNITED STATES MILITARY ACADEMY.

Programme of practical military instruction in the department of tactics, January 1 to December 1.

	Detail.		Months.	Hours.	
	Men.	Class.		A. M.	P. M.
INFANTRY.					
Manual of arms, bayonet exercise, close and extended order.	Whole	1, 2, 3, 4	Mar. 15-Apr. 1	.....	4.15-5.30
Tent pitching, outpost, advance, and rear guard, intrenching, etc.	Detail	1, 2, 3, 4	Apr. 1-Apr. 30	.....	4.15-5.30
Battalion close and extended order, outpost, advance, and rear guard, tent pitching, attack and defense, and security and information.	Whole	1, 2, 3, 4	May 1-May 31	.....	4.15-5.30
Drill	Detail	3	June 22-July 9	9.00-10.00	.....
Do	Whole	4	July 6-July 9	9.00-10.00	.....
Drill (except Saturdays)	do	1, 3, 4	July 10-Aug. 15	7.00- 8.00	.....
Instruction preparatory to tactical exercises (Saturdays).	Detail ....	.....	do	7.30-12.30	.....
Do	Whole	3, 4	do	7.30-12.30	.....
Reconnoissance	Remdr ..	3	do	8.30-10.00	.....
Reconnoissance, mounted	Detail ....	.....	Aug. 17-Aug. 27	7.00-12.30	.....
Infantry with fourth class	do	3	do	7.30- 9.30	.....
Drill	Whole	4	do	7.30- 9.30	.....
Infantry with fourth class. ^a	Detail	1	do	7.30- 9.30	.....
Tent pitching, intrenching, etc.	do	1, 2, 3, 4	Sept. 1-Sept. 30	.....	4.15-5.20
Manual of arms, firing, bayonet exercise, close and extended order.	Whole	1, 2, 3, 4	Oct. 1-Oct. 15	.....	4.15-5.20
Battalion drills	do	1, 2, 3, 4	Oct. 16-Oct. 31	.....	4.15-5.20
CAVALRY.					
Equitation, riding pad saddle ^a	Detail	1, 2	Apr. 1-Apr. 30	.....	4.15-5.30
Instruction in the school of the trooper, squad, troop, and squadron (eight days).	Whole	1	June 22-July 9	10.30-12.00	.....
Riding with third class	Detail	1	do	7.00- 8.30	.....
Riding	do	3	do	7.00- 8.30	.....

^a Instruction on pad saddle is given to only those members of second class whose military seat is considered satisfactory. Hereafter to be confined to first class after September 1.

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Programme of practical military instruction in the department of tactics, January 1 to December 1—Continued.

	Detail.		Months.	Hours.	
	Men.	Class.		A. M.	P. M.
CAVALRY—continued.					
Instruction in the school of the trooper, squad, troop, and squadron (except Saturdays).	Detail	1	July 10-Aug. 15	8.30-10.00	.....
Equitation, jumping hurdles without bridle or saddle (except Saturdays).	.....do.....	1	.....do.....	8.30-10.00	.....
Instruction preparatory to tactical exercises (Saturdays).	.....do.....	1	.....do.....	7.30-12.30	.....
Riding in hall, practical military engineering detail on rainy days.	.....do.....	3	.....do.....	7.00- 8.00	.....
Riding .....	.....do.....	3	Aug. 17-Aug. 27	7.30- 9.30	.....
Riding in hall, cadets, except practical military engineering detail, on rainy days.	.....do.....	3	July 10-Aug. 15	8.00- 9.45	.....
Equitation—riding pad saddle .....	.....do.....	1, 2	Sept. 1-Sept. 30	4.15- 5.20	.....
Instruction in riding hall every other week day (Saturday excepted).	.....do.....	3	Nov. 1-Mar. 15	.....	2.00-4.00
Instruction in the riding hall every other week day (Wednesday and Saturday excepted).	.....do.....	2	Nov. 1-Mar. 31	.....	4.00-6.00
Riding on the plain and in riding hall (except Saturday and during February) every other day.	.....do.....	1	Sept. 1-June 1	11.00- 1.00	.....
Saturdays, same, except during February.	} Whole ...	1	{Sept. 1-Dec. 1 Mar. 15-June 1 }	.....	.....
LIGHT ARTILLERY.					
Instruction	Detail	1, 2, 3	Apr. 1-Apr. 30	.....	4.15-5.30
Instruction (eight days) divided between light, mountain, and horse artillery.	Whole.....	1	June 23-July 9	10.30-12.00	.....
Instruction preparatory to tactical exercises (Saturday).	Detail	1	July 10-Aug. 15	7.30-12.30	.....
Drill (except Saturday) .....	.....do.....	1	.....do.....	8.30-10.00	.....
Do .....	.....do.....	3	.....do.....	8.30-10.00	.....
Horse artillery, alternating with artillery target practice.	.....do.....	1	Aug. 17-Aug. 27	8.30-10.30	.....
Artillery target practice, alternating with horse artillery.	.....do.....	1	.....do.....	7.00 a. m. to 2.00 p. m.	.....
Drill .....	.....do.....	1, 2, 3	Sept. 1-Sept. 30	.....	4.15-5.20
The drills in light artillery included instruction in the school of the driver, fitting of harness, use of the coupling reins of off horse, instruction to post teams with their carriages, to hitch and unhitch, employment of light artillery in the field.					
Instruction in camp in field. During the present season, Aug. 17-27, the field ration will be taken by each cadet in the way of subsistence, to be cooked and prepared individually, service conditions.					
RECRUIT INSTRUCTION, NEW CADETS.					
Physical exercises	Whole	4	June 17-July 5	7.30- 8.15	.....
Infantry instruction .....	.....do.....	4	June 17-July 5	8.45- 9.45	4.30-5.30
Preliminary target instruction .....	.....do.....	4	June 17-July 5	10.30-11.15	.....
Lectures, academic regulations, blue book, care of arms and equipments, firing regulations, security and information.	.....do.....	4	June 17-July 5	12.00-12.45	.....
COAST ARTILLERY.					
Detail	Detail	3	Apr. 1-Apr. 30	.....	4.15-5.30
Do .....	.....do.....	1	July 10-Aug. 15	8.30-10.00	.....
Do .....	.....do.....	3	July 10-Aug. 15	8.30-10.00	.....
Do .....	.....do.....	3	Sept. 1-Sept. 30	.....	4.15-5.30
Instruction in coast artillery consisted in the care, cleaning, etc., of the rifle and mortar and manual of the same; use of horizontal-position finder; use of platting board to determine position, speed, and direction of moving vessels.					

SUPERINTENDENT UNITED STATES MILITARY ACADEMY. 51

Programme of practical military instruction in the department of tactics, January 1 to December 1—Continued.

	Detail.		Months.	Hours.	
	Men.	Class.		A. M.	P. M.
PACK-TRAIN SERVICE.					
Drill.....	Detail	1, 2	Apr. 1-Apr. 30		4.15-5.30
Do.....	do	1	June 22-July 9	7.00-10.00	
Do.....	do	1, 2	Sept. 1-Sept. 30		4.15-5.20
The drills included instruction in the setting up of the aparejo, fitting the same to mules, loading cargo on the mules, and methods of adjusting the loads of different kinds.					
MACHINE GUN.					
Drill.....	Detail	3	Apr. 1-Apr. 30		4.15-5.30
Do.....	do	1	July 10-Aug. 15	8.30-10.00	
Do.....	do	3	July 10-Aug. 15	8.30-10.00	
Do.....	do	3	Sept. 1-Sept. 30		4.15-5.20
Do.....	do	4	July 10-Aug. 15	8.30- 9.30	
This instruction consisted of nomenclature and service of the piece, maneuver of the horsed-gun detachment, firing piece with blank ammunition and ball ammunition on target range.					
MOUNTAIN ARTILLERY.					
Drill.....	Detail	1, 2	Apr. 1-Apr. 30		4.15-5.30
Drill (eight days) divided between light and horse artillery.	Whole	1	June 22-July 9	10.30-12.00	
Drill.....	Detail	1, 2	Sept. 1-Sept. 30		4.15-5.20
The drills included instruction in the material, the gun, its ammunition, sights, etc., fitting pack saddles to mules in transportation of the battery by pack mules.					
SIEGE ARTILLERY.					
Drill.....	Detail	1, 3, 4	Apr. 1-Apr. 30		4.15-5.30
Do.....	do	4	July 6-July 9	7.00-8.00	
Do.....	do	4	July 10-Aug. 15	8.30-9.30	
Do.....	do	1	July 10-Aug. 15	8.30-9.30	
Do.....	do	1, 3, 4	Sept. 1-Sept. 30		4.15-5.20
This instruction comprised the service of the piece, nomenclature and general features of the pieces (rifling breech mechanism, etc.,) ammunition (weights, velocities), penetration, etc., effects of fire.					
3.2-INCH GUN FOOT DRILL.					
Drill.....	Detail	3, 4	Apr. 1-Apr. 30		4.15-5.30
Do.....	do	4	July 6-July 9	7.00-8.00	
Do.....	do	4	July 10-Aug. 15	8.30-9.30	
Do.....	do	1	July 10-Aug. 15	8.30-9.30	
Do.....	do	3, 4	Sept. 1-Sept. 30		4.15-5.20
This instruction consisted of the service of the piece, instruction in aiming, setting the sights for indicated ranges and for indicated deflection, fuse setting, finding the range, and finding the length of fuse.					
TARGET PRACTICE.					
Rifle.....	Detail	4	Apr. 1-Apr. 30		4.15-5.30
Do.....	do	3	June 22-July 9	7 a. m. to 12.30 p. m.	
Do.....	Whole	4	July 6-July 9	7.00- 8.00	2.00-4.00
Do.....	Detail	1	July 10-Aug. 15	7 a. m. to 12.15 p. m.	
Rifle (additional) at time not to interfere with other duty.	Those not complet- ed.	1	do	8.30 a. m. to 12.15 p. m.	
Do.....	do	3	do	10.05 a. m. to 12.15 p. m.	
Rifle.....	Detail	3	Aug. 17-Aug. 27	7 a. m. to 12 m.	

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Programme of practical military instruction in the department of tactics, January 1 to December 1—Continued.

	Detail.			Hours.	
	Men.	Class.		A. M.	P. M.
TARGET PRACTICE—continued.					
Rifle.....	Detail	4	Sept. 1-Sept. 30	.....	4.15-5.20
Pistol, dismounted	do	1	June 22-July 9	7.00-10.00	.....
Pistol, mounted	do	1	do	7.00-10.00	.....
Pistol, dismounted	do	1	July 10-Aug. 15	10.30 a. m. to 12.15 p. m.	.....
DANCING.					
Instruction	Detail	3	June 22-July 9	10.10-11.05	.....
Do.....	Half	4	July 6-July 9	11.00-11.55	.....
Do.....	do	4	do	11.55-12.45	.....
Instruction, optional	do	1	July 10-Aug. 15	.....	3.00-4.00
Instruction	Whole	3	do	11.50-12.45	.....
Do.....	Half	4	do	10.00-10.55	.....
Do.....	do	4	do	10.55-11.50	.....
Do.....	Whole	3	Aug. 17-Aug. 27	12.00-12.45	.....
Do.....	Half	4	do	10.00-10.45	.....
Do.....	do	4	do	10.45-11.30	.....
SWIMMING.					
Cadets not qualified.....	Detail	3	June 22-July 9	11.45-12.45	.....
Do.....	do	4	July 6-July 9	10.10-11.00	.....
Do.....	do	4	do	10.55-11.50	.....
Cadets not qualified, except Wednesday and Saturday.	do	1	July 10-Aug. 15	.....	3.00-4.00
Do.....	do	3	do .....	.....	3.00-4.00
Cadets not qualified	do	4	do	11.00-11.50	.....
Do.....	do	4	do	11.50-12.45	.....
Do.....	do	3	Aug. 17-Aug. 27	10.45-11.30	.....
Do.....	do	4	do	11.45-12.45	.....

Lectures were delivered to the first, third, and fourth classes on days unfit for practical work out doors, from 9 to 10 a. m., on the following subjects:

Framework of the horse, mechanically considered.
Simple diseases and treatment.
Stable management and horseshoeing.
Bits and biting, seats and saddles.
Light artillery in the field.
Care of horses, harness, and equipments.
Security and information.
Infantry drill regulations.
Coast artillery.
Miscellaneous.

APPENDIX C.

REPORT OF INSTRUCTOR OF PRACTICAL MILITARY ENGINEERING.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 10, 1903.

SIR: Complying with instructions contained in circular No. 15, current series, Headquarters United States Military Academy, I have the honor to submit the following report of operations of the department of practical military engineering covering the period from July 1, 1902, to May 20, 1903:

ENGINEER TROOPS.

The engineer detachment, with an authorized maximum strength of 88 men, furnished a daily detail of from 10 to 11 men throughout the year for the post guard and furnished the needful details for cadet instruction in target practice and drills in practical military engineering. The detachment received instruction in target practice, infantry and engineer drills, and signaling during the summer months. During the winter months a morning school was conducted for instruction in common school subjects, with indoor engineer drills, gymnastics, gallery practice, and instruction in the carpenter and blacksmith shops during the afternoons.

The discipline of the detachment has been good and showed a decided improvement over the previous year. The instruction of the detachment as a tactical unit is hampered by the demands necessary for the administration of the Military Academy and in this respect the engineer troops at West Point are at a disadvantage as compared with the engineer companies stationed elsewhere.

CADET INSTRUCTION.

First class.—The course of instruction for the first class in practical military engineering remained unchanged during the past year. Drill was held four times per week during September, 1902, and April, 1903, from 4.15 p. m. to 5.30 p. m., one-half the class alternating in attendance. From July 10 to August 15, 1902, five drills per week were given from 10.30 a. m. to 12.15 p. m., one-half the class alternating in attendance. The course covered bridge construction, pontoon, trestle, and spar, both with the standard equipment and with improvised material; knots, lashings, and splices; rigging of spars for derricks, gins, and shears; problems in field geometry; fabrication of siege material; launching expedients and reconnaissance instruments.

Second class.—During September and April four drills per week were given to the second class in military signaling with the flag and the heliograph.

Third class.—Instruction in the practical use of surveying instruments was given daily, Sundays excepted, from June 23 to July 9, from 7 a. m. to 12.30 p. m., and daily, Saturdays and Sundays excepted, from July 10 to August 15, from 8.30 a. m. to 12.30 p. m. One-third of the class attended on each drill day. The theoretical instruction in surveying having been omitted from the course in mathematics, the method of practical instruction was modified accordingly. A portion of the day's work was devoted to lectures and immediately followed by practical demonstrations with the instruments in the hands of the cadets. The results attained were exceedingly gratifying, and attention is respectfully invited to my detailed report on this subject contained in the annual report of the Superintendent for the year 1902, and especially to the recommendations contained therein.

The need of an additional assistant in the department of practical military engineering is severely felt. At no time during the year has it been practicable to assign more than one instructor to first class drill, and with sections of 45 to 50 men daily it is difficult to impart satisfactory instruction, especially during the months of September and April, when the actual time of attendance on the drill ground does not exceed fifty minutes.

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CONSTRUCTION OF NEW OFFICERS' MESS.

The erection of this building, for which ground was broken March 17, 1902, has been under the supervision of the instructor in practical military engineering. The contract time for completion was May 1, 1903, but owing to certain delays not the fault of the contractor, an extension of two months' time has been granted. The building is rapidly nearing completion and there seems no reason why it should not be ready for occupancy by July 1, 1903. Provision for gas and electric fixtures was made by an appropriation of \$2,000, immediately available, contained in the Military Academy bill for 1904. Bids have been opened and an award made for supplying and installing the fixtures, which will be in place by the time the building is otherwise completed.

ENGINEER BOATHOUSE.

Under an appropriation of \$4,000 contained in the Military Academy bill for 1903, the erection of a boathouse for properly housing the barges and small boats belonging to the Military Academy was commenced in the summer of 1902. The work has been done by day labor, with materials purchased according to law and regulations. The boathouse is located near the north dock, just east of the ordnance boathouse, and is of similar construction. It will be completed before the close of the fiscal year.

NECESSARY IMPROVEMENTS TO WATER SUPPLY.

Under an appropriation of \$10,000 contained in the Military Academy bill for 1903, the work of improving and beautifying the surroundings of the new waterworks system has been continued. The road along the east side of Lusk Reservoir has been completed, affording a continuous driveway around the latter. The road along the north and west sides received its final surfacing and a cobble-stone gutter to carry off the surface water from the roadway. Slopes were trimmed and sown in grass seed and the surroundings generally cleared of all rubbish. This season's operations will complete the work of improving the water supply.

CONSTRUCTION OF WATER TOWER, LUSK RESERVOIR.

This tower has been built and completed save for an approach from the shore which will be constructed during low water in the fall. The tower is 10 feet square and about 35 feet high, built of native stone with ornamental parapet similar to that of the dam. It has four inlet and one outlet valves so arranged that water may be drawn from different levels. Its object is to enable water to be drawn habitually from near the surface where the quality is much better, thus reducing the work of the filter beds and insuring a better quality of water during the summer and early fall months.

For the construction of the tower the reservoir was drained in November after the fall rains had set in, the post being in the meantime supplied directly from Crow's Nest and Sinclair brooks, which were led into the mains by a connection at the old water house. By the end of November the tower had advanced so far as to permit the water to again flow into the reservoir and by the middle of February the water had reached the level of the spillway.

WATERWORKS.

The annual appropriation of \$1,200 for the care of the waterworks was expended in some much needed repairs to the keeper's house at Round Pond and to the siphon and valve houses at that place; also in washing and replacing the filter sand at the main filter beds and in cleaning out the clear water reservoir.

DEPARTMENT OF PRACTICAL MILITARY ENGINEERING.

The annual appropriation of \$1,500 for the use of the department was expended in the purchase of tools, materials, and instruments for cadet instruction and for the extra-duty pay of skilled mechanics from the engineer detachment, as authorized by law.

Very respectfully,

JOSEPH E. KUHN,
*Captain of Engineers, Instructor in Practical Military Engineering,
In Charge of Water Supply.*

The ADJUTANT, UNITED STATES MILITARY ACADEMY.

SUPERINTENDENT UNITED STATES MILITARY ACADEMY. 55

OFFICE INSTRUCTOR PRACTICAL MILITARY ENGINEERING,
West Point, N. Y., August 31, 1903.

SIR: Complying with memorandum instructions from the Superintendent, I have the honor to submit the following supplementary report covering instruction in practical military engineering during the summer of 1903.

First class.—The course prescribed covered the period from July 10 to August 15, inclusive, daily, Saturdays and Sundays excepted, from 10.30 a. m. to 12.15 p. m., one-half the class being present each day. From July 10 to 22 instruction was held in knots, lashings, and splices; from July 22 to 28 in fabrication of siege materials; from July 29 to August 6, spar bridges, derricks, gins, and shears; from August 7 to 9, school of the boat; August 10 to 14, pontoon bridge by successive pontoons.

The programme of instruction was designed to cover work of the greatest practical value to the future officer in his military career and particular attention was devoted to the subject of cordage and work with spars. The average daily attendance was 58 cadets, for whom there was but a single instructor. Although the results attained were sufficiently gratifying, better work could have been done had there been more instructors.

Third class.—Instruction covered the period from June 22 to August 15, inclusive, daily, except Saturdays and Sundays. The daily attendance averaged about 30 cadets for four hours instruction. The average number of attendances per cadet was about 12 for the entire period. Until July 10 four instructors were available, and after this three, one being required to supervise first class instruction.

In general, the same methods were followed as during the summer of 1902. The somewhat smaller class enabled more attention to be devoted to the individual cadet, and the results were correspondingly improved. In the beginning practical work was preceded by a short lecture in which the theory, construction, use and adjustments of the level and transit were progressively explained. These lectures averaged about one hour in length and were immediately followed by practical work with the instruments. As the class progressed in the course and became sufficiently familiar with the instruments to justify the undertaking practical work was given in connection with the survey of the post made under the direction of the department of practical military engineering.

Three separate areas at the north and west portions of the reservation were assigned to as many instructors and the daily sections divided into three field parties, which were marched promptly to their assigned areas, where they were required to make a topographical survey, the work being subsequently plotted on the map by the civilian draftsman. While the rate of work was naturally somewhat slow and occasional errors were made, due to lack of experience, the general results were exceptionally gratifying.

Every cadet had an opportunity for using both level and transit for four hours on a regular survey besides being required to fill the positions of rodman, recorder, and axman on other days. They thus became practically familiar with all the duties of a surveying party and received the maximum amount of experience possible under the limited time available.

It is perfectly safe and reasonable to say that this class has a better practical knowledge of surveying instruments than any class heretofore graduated from the United States Military Academy.

In conclusion I see no reason for modifying the general character of the instruction now given to the first and third classes in practical military engineering under existing conditions. The number of instructors should, however, be increased by one at least, so that three officers may be available for the third class and two for the second.

Very respectfully,

JOSEPH E. KUHN,
Captain, Corps of Engineers, U. S. Army,
Instructor Practical Military Engineering, U. S. Military Academy.

THE ADJUTANT, UNITED STATES MILITARY ACADEMY.

APPENDIX D.

REPORT OF THE TREASURER, QUARTERMASTER, AND COMMISSARY OF CADETS.

OFFICE TREASURER UNITED STATES MILITARY ACADEMY,
West Point, N. Y., August 26, 1903.

SIR: In compliance with instructions contained in Circular 15, Current series, Headquarters United States Military Academy, I have the honor to make the following report of the operations of the departments under my charge for the fiscal year ending June 30, 1903:

TREASURER UNITED STATES MILITARY ACADEMY.

The treasurer of the Academy being "charged with all matters relating to the pay and accounts of the cadets," it is necessary to open an individual account with each cadet, also to keep 31 different accounts, under the heads given in the following statement, which also shows the disbursements and receipts under each account during the fiscal year:

	Dr.	Cr.
Assistant treasurer.....	\$274,293.55	\$259,095.56
Athletic association.....	1,634.50	1,634.50
Balances paid.....	29,915.15	28,846.42
Barber.....	1,108.20	1,108.20
Cadet cash.....	25,437.04	25,183.08
Cadet hospital.....	8,207.28	8,207.28
Cadet laundry.....	18,516.28	17,780.12
Cadet store.....	119,804.40	119,612.28
Cadet mess.....	93,507.08	91,201.62
Confectioner.....	137.50	137.50
Corps of cadets.....	322,872.74	336,997.80
Damages, ordnance.....	138.87	138.87
Dancing.....	515.20	515.20
Dentist.....	596.00	596.00
Deposits.....	21,474.50	18,262.55
Dialectic society.....	312.42	440.40
Equipment fund.....	25,558.00	42,692.00
Expressage.....	29.39	29.39
Gas fund.....	1,760.70	1,790.60
Hops and german.....	2,648.29	2,648.14
Miscellaneous fund.....	.....	45.02
Miscellaneous items.....	1,398.12	1,433.64
Oath (notary public).....	41.50	41.50
Paymaster.....	225,022.55	225,022.55
Rations.....	49,270.50	49,270.50
Periodicals.....	12.77	12.77
Photographer.....	46.00	46.00
Policing barracks.....	6,587.61	6,587.61
Travel pay.....	1,328.94	1,328.94
Young Men's Christian Association.....	684.19	473.92
Washstand, etc., fund.....	.....	406.85

The accounts of the treasurer are inspected every two months by an officer of the academy, detailed by the Superintendent for the purpose, to whom the result of the

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inspection is reported, together with a statement of all debits and credits on different accounts. The last inspection was made July 27, 1903, and reported as follows:

Assets.		Liabilities.	
Assistant treasurer.....	\$19,219.86	Balances paid.....	\$410.08
Cadet cash.....	274.01	Corps of Cadets.....	6,768.08
Cadet laundry.....	905.63	Deposits.....	51.00
Cadet store.....	14,816.88	Dialectic society.....	299.70
Cadet mess.....	5,313.67	Equipment fund.....	50,890.00
Washstand, etc., fund.....	871.90	Gas fund.....	299.30
Hops and german.....	.15	Miscellaneous fund.....	80.40
Reserve fund.....	10,000.00	Miscellaneous items.....	35.52
Cash on hand.....	8,069.56	Young Men's Christian Association..	147.68
	58,971.66		58,971.66

The following statement will indicate quite clearly the improvement in the financial condition of the cadets:

July 1, 1901:	
Indebtedness of the corps.....	\$16,498.01
Balance due the corps.....	\$1,510.22
Number of cadets in debt.....	383
Number of cadets out of debt.....	51
July 1, 1902:	
Indebtedness of the corps.....	\$20,482.61
Balance due the corps.....	\$1,464.63
Number of cadets in debt.....	386
Number of cadets out of debt.....	46
July 1, 1903:	
Indebtedness of the corps.....	\$17,254.58
Balance due the corps.....	\$5,715.33
Number of cadets in debt.....	283
Number of cadets out of debt.....	176

QUARTERMASTER OF CADETS.

In my report of last year under this head I called attention to the inadequateness of the present cadet store building for its present use. More clothing has been manufactured than ever before, and more repairs have been made, so that each year the limited amount of room which the building affords becomes more of a tax upon the economical administration of business. As this condition will be remedied by a suitable building in the near future, this matter is only mentioned at the present time to invite attention to the difficulties attendant in carrying on the business of this department.

The following list shows the number of articles manufactured and repaired at the cadet store during the year:

	Manufactured.	Repaired.
Dress coats.....	320	1,070
Overcoats.....	205	810
Blouses.....	613	1,548
Trousers:		
Gray.....	635	1,770
White.....	2,583	1,719
Flannel.....	301	
Riding.....	72	
Officers'.....		208
Line officers'.....	82	
Staff officers'.....	27	
Riding breeches, officers'.....	20	
Dress coats, officers'.....	6	34
Overcoats, officers'.....	1	8
Blouses, officers'.....	68	109
Capes, officers'.....	4	
Miscellaneous, including "cuts," etc.....	17	1,392
Chevyrons sewed on.....		517
Service stripes sewed on.....		1,214
Socks.....		6,784
Socks tagged.....		4,417
Shoes.....		2,790

58 SUPERINTENDENT UNITED STATES MILITARY ACADEMY.

CADET LAUNDRY.

The amount of work done by the cadet laundry during the past year has greatly increased, as is shown by the following comparative statement. The work has increased to such an extent that it has been necessary to install an additional boiler of 50-horsepower and a new modern and up-to-date engine of 40-horsepower. The laundry machinery is in excellent condition, and numerous changes in the arrangement of same have been made so as to make the operation of laundering the clothes continuous and progressive, so that all articles move forward from one machine to the next until the last operation is finished. This has reduced the cost of laundering to such an extent as to enable the laundry to handle the increased amount of work received from the cadet mess and the cadet hospital (which is washed without charge) without additional cost to the corps of cadets.

The following comparative statement will show the amount of work done this year, and the increase in each class of articles over last year's report:

For cadets.

Belts, shoulder	44,728	Sheets	34,704
Belts, sword	4,391	Shirts, white and negligee	32,601
Belts, waist	24,554	Shirts, night	14,768
Blankets, single	94	Shirts, under	57,620
Coats, fatigue	17	Socks, pairs	59,313½
Clothes bags	7,606	Towels	91,075
Comfortables	105	Trousers, gray	174
Collars	132,910	Trousers, white	37,685
Cuffs, pairs	113,962		
Drawers	53,727	Total	885,388½
Gloves, pairs	56,054	Total 1901-2	899,894½
Handkerchiefs	95,703		
Pajamas, suits	3,838	Decrease during year	14,506
Pillowcases	19,759		

For cadet hospital.

Aprons	31	Shirts, hospital	1,497
Bedspreads	719	Tablecloths	181
Blankets, single	27	Towels	10,529
Mattress covers	5		
Napkins	1,340	Total	23,409
Pajamas, suits	670	Total 1901-2	15,831
Pillowcases	3,583		
Sheets	4,827	Increase during year	7,578

For cadet mess.

Aprons	8,937	Tablecloths	17,787
Caps	164	Table felts	642
Jackets	8,432	Towels	15,938
Meat cloths	824		
Napkins	149,908	Total	205,859
Overalls	273	Total 1901-2	104,153
Pillowcases	998		
Sheets	1,956	Increase during year	101,706
Grand total of pieces laundered			1,114,656½
Grand total of pieces laundered, 1901-2			1,019,878½
Increase during year			94,778

COMMISSARY OF CADETS.

The material and personnel of this department is in better condition this year than last year, owing to the better facilities which have become available during this period. The north wing of the new addition has been at last finished sufficiently to be occupied. The large, handsome, and modern kitchen, equipped with up-to-date and labor-saving appliances for cooking, has added more than any other factor to benefit the mess. The largely increased refrigerators have also exerted a most bene-

ficial influence, permitting large quantities of perishable stores to be purchased at one time and be stored without fear of loss, thus enabling these costly articles of food to be purchased at the lowest market price.

The constant changes which have been made in the mess and its appurtenances, owing to the alterations and improvements which have been undertaken during the past year, have rendered the successful operation of this department rather difficult, but now that excellent facilities for storing, preparing, and serving food have been obtained, and suitable quarters for the numerous employees are available, it is believed that this department can be run with better results, less friction, and more satisfaction to all concerned than has been the case in the past.

The new addition, comprising the south wing of the cadet mess, is in progress of construction. While this will greatly enlarge the already existing facilities, it is so planned that the mess can be operated without any annoyance or friction from this source during its period of building.

With the exception of coffee and sugar, all of the staple articles of food have been maintained at the high prices of last year, but the better facilities of the mess, together with the constant effort to purchase all stores from first hands wherever possible, has resulted in furnishing wholesome, nutritious food for the cadets' table, without material increase in the cost to them.

The following statement shows the quantity of the principal articles of food consumed at the mess during the year:

Butter	pounds..	31,842	Eggs	dozen..	15,802
Coffee	do....	5,652	Flour	pounds..	115,086
Fish	do....	15,155	Meat, fresh	do....	198,368
Meat, salt	do....	12,400	Poultry	do....	13,613
Milk	gallons..	49,197	Sugar	do....	82,949
Potatoes	pounds..	235,884			

The cost of subsistence of the mess during the last year has been 53.85 cents per day, as against 50.3 cents per day for last year, which amounts to a reduction in the cost of board per cadet per annum of \$19.89.

Very respectfully,

THOS. FRANKLIN,
*Captain, Commissary, Treasurer of the Military Academy,
Quartermaster and Commissary of Cadets.*

THE ADJUTANT UNITED STATES MILITARY ACADEMY.

APPENDIX E.

REPORT OF THE SURGEON.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 20, 1903.

SIR: In compliance with your circular of April 14, 1903, I have the honor to submit the following general report of the work done in the medical department during the year ending on this date.

The health of the command during the year has been remarkably good, in spite of the unusually severe and trying winter, showing the hygienic efficiency of the rules and regulations in force on this reservation. The only prevalent disease has been influenza which, during the winter and spring, affected a large proportion of the population, fortunately without dangerous complications or sequels.

There have also been 5 cases of typhoid fever, all among cadets, following each other in quick succession and evidently due to a common cause, the first one being admitted on March 18, 1903, and the last on April 13, 1903. So far as it is possible to determine, the milk (which is very liberally supplied to cadets for drinking) appears to have been the source of the infection. From the time the supply was changed and obtained from a different locality no new case was contracted. The three dairies now furnishing the milk have been carefully selected and a thorough sterilization of the cans is insisted upon. As a further precaution, all the milk is pasteurized before being served in the mess hall. Arrangements are now made to obtain the entire supply from one dairy.

Outside of influenza and typhoid fever, and 1 case of tuberculosis transferred to Fort Bayard, N. Mex., no other case of infectious disease has occurred in the Corps of Cadets. Among officers and enlisted men the only other cases of infectious diseases have been tuberculosis 2, diphtheria 1 (contracted outside), and chicken pox 5.

Recognizing the fact that malarial fever is mostly, if not exclusively, produced by the bite of the anopheles mosquito, every measure has been taken to destroy that insect and prevent its propagation, so that it is expected that but few original cases of fever will occur this summer and fall. As a further measure, a list of all cases of malarial fever observed this year has been prepared, so that necessary precaution may be taken to prevent mosquitoes from having access to them.

The food of the cadets has been quite satisfactory, and the few well-grounded complaints made in regard to it have been promptly corrected. I believe the interval between breakfast (6.30 a. m.) and dinner (1 p. m.) is too long, and have recommended the hour for dinner be changed from 1 to 12.30; the result of such a change would also be a longer time for recreation before work is resumed at 2 p. m.

There have been no deaths among the cadets, officers, or enlisted men during the year.

The cadet hospital is badly planned and arranged for its purposes; besides the new wing now being built, several alterations have been recommended and estimates for them submitted. The soldiers' hospital is also undergoing important changes and improvements.

The statistical report of admissions to hospital, operations performed, and result of treatment will be submitted at the usual time.

Very respectfully,

V. HAVARD,
Lieutenant-Colonel, Deputy Surgeon-General, U. S. Army, Surgeon.
The ADJUTANT, UNITED STATES MILITARY ACADEMY.

SUPERINTENDENT UNITED STATES MILITARY ACADEMY. 61

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., September 7, 1903.

SIR: I have the honor to submit the following report of the work of the medical department at this post for the year ending June 30, 1903:

Cases treated as patients in the cadet hospital, including officers	985
Cases treated at soldiers' hospital (hospital and quarters)	467
Civilians treated (members of officers and soldiers' families and all others to whom medical attendance is usually extended)	2, 158
Prescriptions filled at cadet hospital:	
On written prescriptions	2, 727
On verbal prescriptions (estimated)	2, 500
Prescriptions filled at soldiers' hospital and subdispensary	1, 341
Recruits examined	120

The health of the command during the year has been very good. Table A, hereto appended, shows the causes, number, and ratio of admissions for officers, cadets, and enlisted men.

The largest number of admissions for any disease was from influenza (126), which prevailed in a mild and subacute form during the winter and spring, fortunately without dangerous complications or sequels. Next in order of frequency are, malarial fever (99), all latent or recurrent cases, having been contracted in previous seasons; indigestion (93), mostly the result of indiscreet eating; tonsillitis and pharyngitis (71), from exposure to the trying winter and spring weather; intestinal diseases (54) and bronchial affections (52).

Of acute infectious diseases there were 5 cases of typhoid fever in March and April, probably caused by infected milk. All necessary measures to prevent a recurrence of the disease, from this cause, were promptly taken. This outbreak of typhoid fever has been the subject of several special reports.

As stated in a previous report, believing that the anopheles mosquito is the cause of the propagation of malarial fever, every effort was made to prevent the breeding of mosquitoes on this reservation and to isolate fever cases, with the result that, up to July 1, not a single case of malarial fever is of record as having been contracted at this post. Mosquitoes, however, have been rather common at times, with the easterly winds, being blown from the extensive marsh on the other side of the Hudson River; but as these mosquitoes have no opportunity of becoming infected, they were innocuous. The use of mosquito bars in camp, enforced by orders, had doubtless the excellent effect of preventing the propagation of malarial fever among the cadets, besides adding materially to their comfort.

It should be noted that the eyesight of a large proportion of cadets is more or less defective and needs correction by glasses to enable them to pursue their studies. This condition is not special to cadets, but is about the same as that which prevails among educated classes in civil life, and is in no way attributable to bad lighting or any other hygienic defect. Table B, hereto appended, shows the record of eye work done by Asst. Surg. Theo. C. Lyster, a record which is not much more than half of the entire ophthalmic work done during the fiscal year.

There have been no deaths during the year among officers and cadets. Among enlisted men, one was killed by railroad train and another died in hospital of tubercular peritonitis.

The cadet hospital, as well as the soldiers' hospital, are both undergoing important alterations and repairs which, when completed, will make them as nearly perfect for their purpose as could be desired.

The question of changing the cadets' time for meals to more suitable hours, for their comfort and health, has been made the subject of a special report.

Table C, hereto appended, shows the record of surgical operations performed.

Very respectfully,

V. HAVARD,
Lieutenant-Colonel, Deputy Surgeon-General, U. S. Army, Surgeon.

THE ADJUTANT UNITED STATES MILITARY ACADEMY.

62 SUPERINTENDENT UNITED STATES MILITARY ACADEMY.

A.—Causes, number, and ratio of admissions for officers, cadets, and enlisted men for the year ending June 30, 1903.

Causes of admission to sick report.		Number of admissions.	Ratio per 1,000 of mean strength.
Abscess	Officers and cadets	14	28.98
	Enlisted strength	0	.....
Asthma	Officers and cadets	6	12.42
	Enlisted strength	0	.....
Adenitis	Officers and cadets	2	4.14
	Enlisted strength	0	.....
Appendicitis	Officers and cadets	4	8.28
	Enlisted strength	0	.....
Asthenopia	Officers and cadets	2	4.14
	Enlisted strength	0	.....
Alcoholism	Officers and cadets	0	.....
	Enlisted strength	11	24.31
Aphonia	Officers and cadets	0	.....
	Enlisted strength	1	2.21
Bronchitis	Officers and cadets	52	107.64
	Enlisted strength	7	15.47
Carbuncle	Officers and cadets	1	2.07
	Enlisted strength	0	.....
Circumcision	Officers and cadets	24	49.68
	Enlisted strength	0	.....
Corns	Officers and cadets	42	86.94
	Enlisted strength	0	.....
Cystitis	Officers and cadets	2	4.14
	Enlisted strength	1	2.21
Conjunctivitis	Officers and cadets	10	20.70
	Enlisted strength	2	4.42
Catarrh (nasal and pharyngeal)	Officers and cadets	10	20.70
	Enlisted strength	0	.....
Coryza	Officers and cadets	24	49.68
	Enlisted strength	18	39.78
Constipation	Officers and cadets	0	.....
	Enlisted strength	5	11.05
Cellulitis	Officers and cadets	3	6.21
	Enlisted strength	0	.....
Examination of eyes	Officers and cadets	15	31.05
	Enlisted strength	0	.....
Exhaustion	Officers and cadets	15	31.05
	Enlisted strength	4	8.84
Fistula of anus	Officers and cadets	1	2.07
	Enlisted strength	0	.....
Furuncle	Officers and cadets	43	89.01
	Enlisted strength	22	48.62
Gastritis	Officers and cadets	2	4.14
	Enlisted strength	15	33.15
Hemorrhoids	Officers and cadets	8	16.56
	Enlisted strength	7	15.47
Hernia	Officers and cadets	0	.....
	Enlisted strength	3	6.63
Intestinal diseases	Officers and cadets	64	132.48
	Enlisted strength	31	68.51
Ingrowing toe nail	Officers and cadets	2	4.14
	Enlisted strength	0	.....
Indigestion	Officers and cadets	93	192.51
	Enlisted strength	23	50.83
Ivy poisoning	Officers and cadets	4	8.28
	Enlisted strength	6	13.26
Influenza	Officers and cadets	126	260.82
	Enlisted strength	16	35.36
Jaundice	Officers and cadets	3	6.21
	Enlisted strength	0	.....
Hypertrophy of heart	Officers and cadets	0	.....
	Enlisted strength	1	2.21
Laryngitis	Officers and cadets	1	2.07
	Enlisted strength	5	11.05
Malarial fever	Officers and cadets	99	204.93
	Enlisted strength	68	150.28
Malingering	Officers and cadets	0	.....
	Enlisted strength	4	8.84
Neuralgia	Officers and cadets	22	45.54
	Enlisted strength	2	4.42
Nervous diseases	Officers and cadets	0	.....
	Enlisted strength	4	8.84
Otitis media	Officers and cadets	7	14.49
	Enlisted strength	3	6.63
Pharyngitis	Officers and cadets	28	57.96
	Enlisted strength	8	17.68
Prolapse of rectum	Officers and cadets	0	.....
	Enlisted strength	1	2.21

SUPERINTENDENT UNITED STATES MILITARY ACADEMY. 63

A.—Causes, number, and ratio of admissions for officers, cadets, and enlisted men for the year ending June 30, 1903—Continued.

Causes of admission to sick report.		Number of admissions.	Ratio per 1,000 of mean strength.
Pleurisy	Officers and cadets	0	.....
	Enlisted strength	2	4.42
Rheumatism	Officers and cadets	15	31.05
	Enlisted strength	27	59.87
Synovitis	Officers and cadets	2	4.14
	Enlisted strength	2	4.42
Typhoid fever	Officers and cadets	5	10.35
	Enlisted strength	0	.....
Tuberculosis	Officers and cadets	1	2.07
	Enlisted strength	2	4.42
Tonsillitis	Officers and cadets	43	89.01
	Enlisted strength	14	30.94
Tattooing removed	Officers and cadets	1	2.07
	Enlisted strength	0	.....
Urethral stricture nonvenereal.	Officers and cadets	5	10.35
	Enlisted strength	0	.....
Vaccinia	Officers and cadets	4	8.28
	Enlisted strength	0	.....
Skin diseases	Officers and cadets	11	22.77
	Enlisted strength	3	6.63
Vertigo	Officers and cadets	4	8.28
	Enlisted strength	0	.....
Wounds and injuries	Officers and cadets	146	302.22
	Enlisted strength	112	247.52
Worms	Officers and cadets	1	2.07
	Enlisted strength	0	.....

B.—Record of ophthalmic work done by First Lieut. Theo. C. Lyster, assistant surgeon, U. S. Army, from January 28, 1903 (date from which data have been kept), to June 30, 1903.

The number of cases was about equally divided among cadets and the other members of the garrison. In all, 108 recorded cases have been examined. Seven of these were not tested for any refractive error; the balance, however, were examined, and out of these glasses were prescribed for 73 cases. Homatropine was used only in young children or when necessary in a few special instances.

Among the cases were found the following pathological conditions exclusive of refractive errors:

Central choroiditis (left)	1	Trachoma	2
Glaucoma, chronic	1	Conjunctivitis:	
Senile cataract	3	Acute, both eyes	1
Concomitant convergent strabismus	1	Subacute, both eyes	2
Divergent strabismus	1	Chronic, both eyes	2
Chalazion	2	Pannus	1
Hordeolum	5	Foreign bodies	3
Cellulitis, right upper lid	1		

The following errors in refraction were found:

Compound hyperopic astigmatism ..	25	Hyperopia	3
Simple hyperopic astigmatism	14	Myopia	2
Compound myopic astigmatism	38	Mixed astigmatism	4
Simple myopic astigmatism	9	Irregular	3
Presbyopia	3		

The uncompleted pathological cases which need attention are—

Central choroiditis	1	Divergent strabismus	1
Glaucoma, chronic	1	Trachoma	1
Senile cataract	3		

The balance of the pathological cases have entirely recovered or improved sufficiently so that they do not desire further treatment. The cases of Chalazion and Hordeoli were operated upon with good results. Two of the cases of senile cataract, the case of divergent strabismus, and the case of trachoma are ready for and desire operative treatment.

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C.—*Surgical operations performed during the year ending June 30, 1903.*

	Cases.
Ingrowing toe nails (9 cadets, performed by Maj. J. D. Glennan; 1 cadet, by Lieutenant-Colonel Havard; 2 cadets, by First Lieut. Theo. C. Lyster).....	12
Tonsilotomy (2 cadets, performed by Captain Stark; 1 cadet, by Major Glennan; 2 soldiers and 3 civilians, by Captain Stark; 2 soldiers, by Lieutenant Lyster; 1 civilian, by Lieutenant Lyster)	10
Circumcisions (10 cadets, performed by Major Glennan, 11 by Captain Stark, 1 by Lieutenant-Colonel Havard, 6 by Lieutenant Lyster, all cadets; and 13 soldiers, by Captain Stark).....	41
Appendectomy (2 cadets and 1 civilian, by Captain Stark).....	3
Removal of tattooing (1 cadet, by Captain Stark)	1
Removal of polypus (1 cadet, by Captain Stark; 1 cadet, by Lieutenant Lyster)...	2
Abscess cervical glands (2 cadets, performed by Captain Stark)	2
Varicocele (2 cadets and 11 soldiers, performed by Captain Stark)	13
Trachelorrhaphy (10 civilians, by Captain Stark).....	10
Uterine curettage (11 civilians, by Captain Stark)	11
Adenoid curettage (3 soldiers, 7 civilians, by Captain Stark)	10
Excision hemorrhoids (1 officer, 9 soldiers, 3 civilians, by Captain Stark)	13
Hystero-salpingo-oophorectomy (1 civilian, by Captain Stark and Doctor Barrows, New York City).....	1
Curettage varicose ulcer (1 civilian, by Captain Stark).....	1
Straightening septum of nose (1 cadet, 2 civilians, by Captain Stark).....	3
Excision tubercular gland (1 soldier, by Captain Stark).....	1
Craniectomy (1 civilian, by Captain Stark)	1
Laparotomy for tubercular peritonitis (1 soldier, by Captain Stark).....	1
Amputation right arm (1 civilian, by Captain Stark).....	1
Salpingo-oophorectomy, double (1 civilian, by Lieut. George H. R. Gossman) ...	1
Paracentesis of membrana tympani (1 cadet, 1 civilian, and 1 soldier, by Lieutenant Lyster)	3
Nephrectomy (1 cadet, by Doctor Lilienthal, Mount Sinai Hospital, New York City)	1
Hernia, radical operation (3 soldiers, 4 civilians, by Captain Stark).....	7
Perineorrhaphy (8 civilians, by Captain Stark)	8

APPENDIX F.

REPORT OF QUARTERMASTER AND DISBURSING OFFICER.

OFFICE QUARTERMASTER AND DISBURSING OFFICER,
West Point, N. Y., July 11, 1903.

SIR: In compliance with instructions from your office, per circular No. 15, dated April 14, 1903, I have the honor to submit herewith the following report, in triplicate, of the operations of the quartermaster's department, United States Military Academy; Quartermaster's Department, U. S. Army, and as director of the gas works, United States Military Academy, for the year ending June 30, 1903.

QUARTERMASTER'S DEPARTMENT, UNITED STATES MILITARY ACADEMY.

My duties in this branch are defined in paragraph 14, Regulations of the United States Military Academy, 1902.

Contracts entered into during the year and those made in previous years and remaining in force in part or for the whole of the fiscal year to which this relates are as follows:

No.	Contractor.	Date.	Purpose.
1	The Penn Metal Ceiling and Roofing Co., Limited.	July 22, 1901	Steel ceilings, extension cadet mess building.
2	James O'Toole, Jr.	Oct. 24, 1901	Construction of south wing cadet hospital.
3	Hewitt & Warden	Oct. 26, 1901	Electrical conduits, south wing cadet hospital.
4	J. A. Toscani & Co.	Oct. 30, 1901	Marble and tile work, cadet hospital.
5	James O'Toole & Son.	Dec. 17, 1901	Enlarging cadet mess hall.
6	Hewitt & Warden	Dec. 24, 1901	Electric work, cadet mess hall.
7	John H. Parker Co.	Feb. 10, 1902	Construction officers' mess and quarters.
8	The Neuchatel Asphalt Co., Limited.	May 1, 1902	Asphalting, cadet hospital.
9	Dickson & Eddy	June 2, 1902	Anthracite coal.
10	Westmoreland Coal Co.	.....do.....	Gas coal.
11	Steele & Condict	June 28, 1902	Reconstructing ice and refrigerating machinery.
12	Standard Oil Co., of New York.	.....do.....	Gas oil.
13	Hewitt & Warden	.....do.....	Generator and engine, cadet mess.
14	E. A. Matthews	.....do.....	Steam-heating plant and plumbing, cadet hospital.
15	Fitzgibbons Boiler Co.	Sept. 15, 1902	Boilers for cadet mess hall.
16	Eastern Bridge and Structural Co.	Nov. 3, 1902	Roof of cadet mess hall.
17	Alexander S. Traub	Dec. 3, 1902	Completion of cadet mess hall.
18	West Side Foundry Co.	Dec. 4, 1902	Iron stairs, etc., cadet mess hall.
19	J. A. Toscani & Co.	Dec. 10, 1902	Floor tiling, etc., cadet mess hall.
20	The Penn Metal Ceiling and Roofing Co., Limited.	Dec. 18, 1902	Metal ceilings for cadet mess hall.
21	Wrought Iron Range Co.	Jan. 13, 1903	Cooking apparatus, cadet mess hall.
22	Black & Boyd Manufacturing Co.	May 12, 1903	Gas and electric fixtures, new officers' mess and quarters.
23	Brooklyn Fire Brick Works.	May 20, 1903	Floor benches, gas house.

All of the above contracts, with the exception of those numbered 5, 9, 10, 11, 15, 16, and 21, are still in force.

The following improvements and repairs have been made:

Building 5 sentry boxes for use in cadet camp.

Laying 2,000 feet of flooring in post stable.

Repainting office of livery stable.

Excavating, concreting, and ventilating basement, and placing new furnace in quarters 15.

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Building new back and front porches at quarters 39, concreting back area, converting alcove room on second floor into modern bathroom with fixtures complete.

Enlarging dining room of quarters 27 and building modern bathroom on third floor.

Draining basement of quarters 29 and 31.

Building bay window and enlarging porch of quarters 23.

Converting 2 bathrooms into bedrooms, reflooring 3 bedrooms in quarters 21.

Painting exterior and interior of restaurant.

Painting tin roofs of artillery stable.

Painting tin roof of engine house.

Painting tin roof of quartermaster's stables.

Renovating interior of hotel, repairing ranges, relining refrigerators, repairing area walls, bake ovens, reshingling roof of ice house.

Making storm sash for 3 sets of officers' quarters.

Making 14 large modern refrigerators.

Post cemetery, addition to greenhouse 60 feet long by 8 feet wide.

Painting interior walls, ceilings, and woodwork, cottage in cemetery.

Repairing leaders and gutters of 35 sets of enlisted men's quarters.

Painting interior walls, ceilings, and woodwork of 24 officers' quarters.

Painting and paperhanging interior of band leader's quarters.

Placing new floors in 5 rooms and halls, new plumbing in bathroom, installing furnace heat.

Remodeling double set of enlisted men's quarters west of engineer's barracks into officers' quarters.

Reshingling and repairing roofs of 5 sets of officers' quarters.

Painting interior walls, ceilings, and woodwork of south guardhouse.

Reflooring double set of enlisted men's quarters throughout.

Painting exterior woodwork, roofs, and porches of soldiers' hospital.

Painting and touching up interior walls, ceilings, and woodwork of cadet hospital.

Placing metal ceilings in two squad rooms.

Making eight upright lockers for hospital corps.

Flooring two rooms in cadet store, connecting two rooms into one by archway, cutting two new doors, and painting interior of four rooms.

Building seven sets of wooden steps leading up to terrace of new officers' quarters.

Building picket fence 7 feet high with double and single gates at south-dock ferry.

Painting lamp-posts and iron railings throughout the post.

Repairing plaster cornices of drawing academy and painting walls, ceilings, and woodwork of same.

Painting interior walls and woodwork of hospital steward's quarters on duty at the cadet hospital.

Building squad room in stable of quartermaster's department and providing same with five upright lockers.

Excavating basement under quartermaster's storehouse and placing windows in same.

Excavating basement under carpenter shop and placing windows in same.

Remodeling basement rooms under barracks of field musicians into modern bathroom and washroom with fixtures complete.

Concreting floor of furnace room.

Repairing roof, gutters, and leaders of band-practice room and painting same.

Building 2 bedrooms in attic of quarters 49.

Remodeling attic of quarters 48; placing dormer windows, bedrooms, and bathroom with modern fixtures.

Building 75 feet two-story brick addition to cadet laundry.

Concreting floor and placing gutters in first floor of laundry.

Installing 2 new boilers; changing smokestack.

Repainting interior of post guardhouse and placing new floors in same; installing hot-air furnace.

Repairing glass roof of gymnasium. Placing new bowling alleys.

Painting interior walls and woodwork of gymnasium.

Placing permanent benches in 3 galleries of riding hall.

Building shower baths in cadet camp.

Painting and calcimining interior walls, ceilings, and woodwork of all rooms in cadet barracks; repairing floors and laying new floors in eleventh and twelfth divisions; painting porch roofs and laying granolithic sidewalk in front of eleventh and twelfth divisions and in west sallyport.

Making 150 white-pine box lockers for use of cadets in camp.

Making 18 large packing boxes for use of cadets in barracks.

Making 400 feet of shelving for attic of library.

Repairing roof, gutters, and leaders of headquarters building.

Painting exterior woodwork of building.

Making wooden window and door screens for six sets of officers' quarters.

Laying 640 feet of sewer and 250 feet of water pipe in cadet camp.

Laying 1,750 feet of 6-inch water main from the corner of the academy building to the hotel.

One hundred and forty feet of subway conduit for steam pipes of a cross section of 5 by 6 feet.

Two 60-horsepower engines installed and 8,000 feet of steam pipe laid.

The steam plants on the post kept in repair and in proper working order.

Two benches with 6 retorts at the gas house renewed.

All plumbing kept in repair during the year.

The cemetery and grounds kept in excellent repair during the year.

The number of requests for small repairs to the houses, plumbing, etc., amounted to 5,700, from which it will readily be seen that the amount of labor and material required for the small every-day repairs occurring about the quarters of the post is enormous.

PUBLIC WORKS UNDER CONSTRUCTION.

Addition and extension of the cadet mess hall, which was being done under contract with James O'Toole & Son, has been greatly delayed, due to the inability of the contractors to handle a work as large as this. The Fidelity and Deposit Company of Maryland, being the bondsmen on the contract, have about completed the work, which included the north wing and kitchen. The south wing is to be done by Alexander S. Traub, who will begin the work of the erection of the structure as soon as the excavation is completed. This work is being done by the post quartermaster. When this building is completed it will be the best and most practical of its kind, the kitchen being supplied with all modern appliances for cooking, cold storage, electric plant for lighting the building and running fans to keep the temperature down.

New south wing to cadet hospital.—This work was being done under contract with James O'Toole, jr., and has been delayed for the same reason as the work on the extension of the cadet mess hall. The same bondsmen were on his contract and are completing his work. The work on this building is completed to the roof line, and the work is steadily advancing toward completion.

I desire particularly to invite attention to the necessity for providing ample storage capacity for coal when the plans are being made for the enlargement of the post. It would be economical to have storage capacity capable of storing a year's supply of coal for the entire requirements of the post. For the last three years the increase in the price of coal has caused the appropriation for fuel and apparatus to be insufficient for the needs of the post. This led to a very careful and exhaustive study of prices of the coal trade, and I discovered that under the present system of determining the prices for coal the minimum price is set for delivery made during the month of April, and that a 10 per cent advance per ton is added to this minimum price for deliveries during each successive month after the month of April until this minimum has been increased 50 cents per ton. The price then remains constant until the following April.

It will be seen from this that a saving of 50 cents a ton can be made on the price of coal for the post provided the coal is stored in April. At the present rate of coal consumption at this post a saving of from \$5,000 to \$7,000 per year can be made by having coal sheds for storing a year's supply of coal when it is selling at the minimum price. As these sheds are merely four walls and a roof, the saving to the Government in the cost of coal would more than pay for the storage sheds in a few years.

The number of animals at the post has increased greatly during the past few years and should be increased at least 50 per cent more in order to furnish proper and efficient transportation facilities for the needs of the post. As it now is, the storage capacity for forage is insufficient. In order to obtain the most economical prices for forage at this post, it is necessary to have delivery made by boat, and in order to do this there should be storage capacity for at least a six months' supply of forage, so as to carry the department over the time during which transportation is shut down by the freezing of the river.

The stables for the public animals are insufficient. It has been necessary for the last few years to make temporary inclosures to protect the animals from the weather. A modern stable of sufficient capacity should be built as soon as practicable.

Statement of the receipts and disbursements under the various heads of appropriations during the year ending June 30, 1903, accompanies this report, marked "A."

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QUARTERMASTER'S DEPARTMENT, UNITED STATES ARMY.

The duties pertaining to this Department are enumerated in paragraph 1076, Army Regulations 1901.

Contracts entered into during the year and prior thereto remaining in force in part or for the whole of the fiscal year are as follows:

No.	Contractor.	Date.	Purpose.
1	C. Daly	Apr. 9, 1902	Hard and soft pine wood.
2	Dickson & Eddy .....	.....do.....	Anthracite coal.
3	Richey, Brown & Donald	May 21, 1902	Steel and iron, upper porch army-service barracks
4	E. A. Matthews	June 25, 1902	Road and retaining wall.
5	William E. Dante	Aug. 27, 1902	Oats.
6	O'Brien & Kellogg .....	.....do.....	Hay.
7	Chas. L. Rickerson .....	.....do.....	Forage and straw.
8	E. A. Matthews	Feb. 24, 1903	Road and retaining wall to southern end of post.
9	The Schilling Co.	Feb. 27, 1903	Terazzo flooring, etc., at soldiers' hospital.
10	E. A. Matthews	June 26, 1903	Construction of road.

All of the above contracts except those marked 9 and 10 have been completed. The work on both the last-mentioned contracts is progressing.

The following improvements and repairs were made by the Quartermaster's Department of the Army during the year:

The plumbing at the soldiers' hospital was entirely renovated, making a lavatory for each ward composed of shower baths, water-closets, and basins, with linen closets opening upon the hall. The entrance into the lavatories is from the wards through a vestibule. A third lavatory for the attendants has been placed upon the second floor of the hospital.

Upright lockers for the field musicians were installed in their barracks.

General repairs to the quarters occupied by the officers on duty with the troops and of the married enlisted men.

Road from the south dock to the south end of post.

I desire to invite particular attention to this road, which, in my opinion, is one of the important improvements of the post. It will greatly facilitate the transportation of persons and material from the railroad station and south dock to the south end of the post, saving both time and expense. It will be a most economical investment when completed. This road will be 2,779 feet long, rising by an easy grade of 8.33 per cent for 880 feet; then follows a bench with a grade of 2 per cent for 783 feet 9 inches, and then rising to the level of the main road of the post by a grade of 6.25 per cent for 1,115 feet 3 inches.

At the south end, where it will join with the main road of the post, it will link together a number of roads from different sections of the post, furnishing ready and expeditious communication with the railroad station, the ferry, and the south wharf.

The work on this road, which was originally begun on January 28, 1901, and which has been going along very slowly until last year because there was no money available for this work particularly, has now made good progress, and with the appropriation of \$30,000, which is asked for in the Military Academy bill for the fiscal year 1904, and such money as can be contributed to it from the general funds of the Army for road making, should complete the road entirely.

The following is an approximation of the work which has been done on this road:

Beginning at the south end of the road, for a distance of 360 feet it is completed and ready for the macadam. From this section about 800 cubic yards of earth have been excavated.

From the 360-foot point to the 500-foot point the road level averages 3 feet below the grade, and about 360 cubic yards of filling have been completed.

From the 500-foot point to the 800-foot point the road level averages 5½ feet below the grade. The completed retaining wall averages 14½ feet high, 7 feet wide, and contains 1,130 cubic yards of stone. About 370 cubic yards of fill have been made along this section.

From the 800-foot point to the 1,200-foot point the road averages 3 feet below the grade. The retaining wall averages 9 feet high by 7 feet wide and contains 890 cubic yards of stone. About 1,000 yards of filling have been done along this section.

From the 1,200-foot point to the 1,400-foot point this section is ready for the macadam, and the breast-high wall is completed except the coping. Five hundred and eighty cubic yards of retaining wall have been built and 200 cubic yards of rock excavated from this section.

From the 1,400-foot point to the 1,600-foot point the road level averages 2 feet below the grade. One thousand cubic yards of rock have been excavated, 3,000 cubic yards of retaining wall built, and 450 cubic yards of fill made.

From the 1,600-foot point to the 1,740-foot point this section is ready for the macadam. About 4,600 cubic yards of rock have been excavated from this section.

From the 1,740-foot point to the 2,370-foot point there has been practically no work done. About 25 yards of retaining wall have been built, and about 50 cubic yards of rock excavated. Considerable rock has been cleaned off along this section, making it ready for blasting, but the total work done on the section is very slight compared with what has to be done between these points.

From the 2,370-foot point to the 2,779-foot point the road level is nearly ready for the macadam. One thousand four hundred and eighteen cubic yards of rock have been excavated, and 431 cubic yards of concrete wall, with foundation for same, have been built.

An approximate estimate of the work still to be done on this road is as follows:

To be excavated	cubic yards..	8,000
Filling	do....	3,700
Retaining wall	do....	820
Concrete	do....	150
Breast-high wall	linear feet..	2,170
Granolithic sidewalk	do....	2,779

I most earnestly urge the pushing of this road to a rapid completion on the lines on which it has been laid out.

TRANSPORTATION.

In addition to the ordinary every day demand upon this office for draft purposes and daily policing of the post, transportation has been furnished for the hauling of the following:

One thousand six hundred and eighty tons of forage; 8,500 tons of coal; 200 cords of wood; material for the repair of over 18 miles of roads and paths; 387 tons of building materials; 360 tons of subsistence stores; 751 loads of clothing and equipment; 313 loads of supplies for post exchange; 360 loads of gravel; 900 cubic yards of sand, and 1,000 barrels of tar.

POST CEMETERY.

The total number of interments in this cemetery which was first laid out in 1816, up to include June 30, 1903, is 1,229. The number of interments from July 1, 1902, to June 30, 1903, is 31. The care and maintenance of this cemetery is provided for in the appropriations of the United States Military Academy.

Experience in the past has shown the necessity of a receiving vault at the post cemetery, due to the increase in the number of bodies which are being brought here from other places for interment in this cemetery.

In this connection I desire to invite attention to the pay of \$900 given Mr. Rhodes, the superintendent and keeper of the post cemetery, who not only has charge of the interments, but the keeping up of the grounds and everything pertaining thereto. He should really be designated as the superintendent and gardener of the post cemetery, and his pay should be raised to \$1,200 a year, for he is well worth the same, and his duties more than warrant such a raise in his pay.

DETACHMENT OF ARMY-SERVICE MEN, QUARTERMASTER'S DEPARTMENT.

The detachment of army-service men of the quartermaster's department has now a strength of 150 men. It would seem on the surface that this number of men would be sufficient for the purposes for which they are used, but upon a careful examination of the roster indicating the duties on which these men are engaged it will be seen that, after deducting the men who are on permanent duties, such as janitors, clerks, policemen, teamsters, mechanics, etc., the number of men available for general laboring work does not average more than 12, provided none of the men are on sick report. It is readily seen that it is impossible to answer the calls for handling the enormous amount of freight which arrives at this post, do such moving of property as is necessary about the post, and all the general work which comes up in different shapes and forms during the day with 12 men. The result is it is necessary to hire a large number of civilians for work which should be done by men of the army-service detachment. For this reason I most urgently recommend that the strength of the detachment be increased to 200 men, and I have, with the authority of the Superintendent, introduced into the estimate for the Military Academy for the fiscal year 1904 an item increasing the strength of this detachment to 200 men.

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I feel that the men of this organization as a class, if properly handled, render services as good in quality and greater in quantity than the civilian employees who are hired in large numbers during the working season of the year. It is not only more economical for the Government to increase the strength of this detachment than it is to hire civilians to do the work done by these men, but the men themselves are always on hand to respond for any emergency calls which are made upon them outside of the usual working hours of the day.

DISBURSEMENTS.

The amounts received, disbursed, etc., under the various heads of appropriations are shown in the accompanying statement marked "B."

GAS WORKS UNITED STATES MILITARY ACADEMY.

As director of the gas works, I am charged with providing the necessary illuminating gas for the needs of the post. The revenue derived from the sale of gas, coke, and tar is applied to payment of the civilian employees at the gas works and purchase of gas coal if the appropriation therefor is not sufficient and for miscellaneous expenses not provided for by the annual appropriations of Congress. Gas is charged for at the rate of 75 cents per 1,000 feet for all persons using it for personal use and for public buildings which is chargeable to the United States Quartermaster's Department, except cadets who pay 35 cents each month to the gas fund irrespective of the amount of gas used by them.

Coke is sold at \$1.17 per 18 bushels. During the past winter it was sold by the wagon load at the same proportionate price and in such a manner as to aid greatly the inhabitants of the adjoining village of Highland Falls and to mitigate in a great degree the suffering incident to these people from the scarcity of coal due to the coal strike of the preceding summer.

It is customary to receive bids for the yearly output of tar. The recorded price for it during the past fiscal year has been 2½ cents per gallon.

During the fiscal year 23,646,600 cubic feet of gas were manufactured, which is an increase of 2,303,800 cubic feet over the preceding fiscal year; 5,301,000 pounds of gas coal and 4,700 gallons of oil were used in the manufacture of this gas.

In this connection special attention is invited to the increased demand upon the gas works during the past fiscal year. The capacity of the holders when full is 83,000 cubic feet, and sometimes during the winter the amount of gas consumed in twenty-four hours has been over 100,000 cubic feet; in fact, throughout the winter months the consumption of gas averages for the twenty-four hours more than the storage capacity which necessitates the entire plant being kept in action day and night, and in case of any accident or breakdown of any kind would leave the post short of gas.

It will be some years before the new power plant can be erected, and I would recommend an increase of the present gas plant simply as a prevention against the complete loss of ability of illuminating the post and the buildings thereon in case of a breakdown of the gas plant.

The present superintendent of the gas works, Mr. Long, is a most able, capable, and earnest man with his work. It is due entirely to his efficiency that the plant has been able to cope with the demand upon it, which is shown above to be nearly 25 per cent greater than its capacity.

The receipts and disbursements pertaining to the gas works are shown in the statement of special contingent fund marked "C."

The amount of gas manufactured during the fiscal years 1902 and 1903 are given in months in an appendix marked "D."

SPECIAL CONTINGENT FUND UNITED STATES MILITARY ACADEMY.

This fund is derived from the rent of hotel, stables, store, post-office, and miscellaneous receipts.

Expenditures from this fund are made under direction of the Superintendent, under authority of chapter 212, act of Congress, May 1, 1888.

Expenditures for the repairs of the buildings which pay rent are made from this fund into which the rental goes. The estimate of the receipts and disbursements are included in the statement marked "C."

* * * * *

Very respectfully,

J. B. BELLINGER,
Major and Quartermaster, U. S. Army,
Quartermaster U. S. Military Academy,
Post Quartermaster and Director of Gas Works.

The ADJUTANT U. S. MILITARY ACADEMY.

SUPERINTENDENT UNITED STATES MILITARY ACADEMY. 71

A.—Statement showing receipts and disbursements, etc., of funds pertaining to the appropriations for the support of the United States Military Academy during the fiscal year ending June 30, 1903.

To whom paid.	Date.	Current and ordinary expenses.	Miscellaneous items and incidental expenses.	Buildings and grounds.	Memorial Hall.	Total.
CR.						
Balance on hand fiscal year:						
1899	July 1, 1902	\$18.00				\$18.00
1900				\$2.52		2.52
1901		1,896.60	\$45.44	774.72		2,716.76
Deficiency June 30—						
1901		368.02	.35	42.93		411.30
1901-2		1,294.32	207.89	40,181.32		41,683.53
1902		6,372.87	773.21	14,471.01		21,617.09
Urgent deficiencies June 30, 1902.		2,815.47	1,208.42	.04		44,023.98
Memorial Hall					\$4,000.55	4,000.55
Received since fiscal year—						
1899		144.00				144.00
1901-2				6,000.00		6,000.00
1902				21,367.22		21,367.22
1903		90,838.35	38,298.00	84,826.00		213,957.35
1903-4		110.00	1,019.00	32,000.00		33,129.00
B. and G. (no year):						
Officers' quarters and mess				108,950.20		108,950.00
Enlarging the Military Academy				110,000.00		110,000.00
Terrace platform, Memorial Hall				5,000.00		5,000.00
Total		103,857.63	41,547.31	423,615.76	4,000.55	573,021.25
DR.						
Deposited fiscal year 1901	June 30, 1903	1,896.60	45.44	774.72		2,716.76
Deficiency June 30, 1901	do	368.02	.35	11.93		380.30
Urgent deficiencies June 30, 1902.	do	140.65	3.54	.01		144.23
Disbursed fiscal year:						
1899	do	162.00				162.00
1900	do			2.52		2.52
Deficiency June 30—						
1901	do			31.00		31.00
1901-2	do	1,050.47	35,347.70			39,398.17
1902	do	5,102.29	677.26	21,704.78		27,484.33
Urgent deficiencies June 30—						
1902	do	2,674.82	1,204.88			3,879.70
1903	do	85,439.08	34,018.44	63,116.35		182,573.87
1903-4	do	92.25	218.95	8,406.39		8,717.59
B. and G. (no year):						
Officers' quarters and mess	do			93,089.61		93,089.61
Enlarging the Military Academy	do			57,557.53		57,557.58
Balance on hand fiscal year—						
1901-2	do	243.85	207.89	7,843.62		8,295.36
1902	do	1,270.58	95.95	14,133.45		15,499.98
1903	do	5,399.27	4,274.56	21,709.55		31,383.48
1903-4	do	17.76	800.05	23,593.61		24,411.41
B. and G. (no year):						
Officers' quarters and mess	do			15,860.39		15,860.39
Enlarging the Military Academy				52,442.47		52,442.47
Terrace platform, Memorial Hall				5,000.00		5,000.00
Memorial Hall					4,000.55	4,000.55
Total		103,857.63	41,547.31	423,615.76	4,000.55	573,021.25

J. B. BELLINGER,
Major and Quartermaster, U. S. Army,
Disbursing Officer United States Military Academy.

WEST POINT, N. Y., July 11, 1903.

72 SUPERINTENDENT UNITED STATES MILITARY ACADEMY.

B.—*Statement of funds pertaining to the Quartermaster's Department, United States Army, received and disbursed during the fiscal year ending June 30, 1903.*

Balance on hand June 30, 1902.....	\$12,964. 15
Received since:	
Regular supplies	51,830. 03
Incidental expenses	11,512. 41
Transportation of the Army	27,708. 85
Barracks and quarters	4,932. 10
Hospitals	5,716. 01
Clothing and equipage.....	390. 30
Sales to officers, etc.....	6,170. 43
Sales at auction	877. 15
Total to be accounted for.....	122,101. 43
Disbursed:	
Regular supplies	56,332. 04
Incidental expenses	11,441. 27
Transportation of the Army.....	26,738. 79
Barracks and quarters	6,229. 99
Hospitals	3,617. 25
Clothing and equipage.....	799. 93
Deposited	7,808. 86
Balance on hand June 30, 1903.....	9,133. 30
Total.....	122,101. 43

J. B. BELLINGER,
Major and Quartermaster, U. S. Army.

WEST POINT, N. Y., July 11, 1903

C.—*Statement of receipts and expenditures pertaining to the special contingent fund, United States Military Academy, from July 1, 1902, to June 30, 1903.*

Balance on hand July 1, 1902	\$1,062. 05
Amounts received:	
Hotel	\$2,000. 00
Post-office	112. 50
Stables	310. 00
Store	312. 50
	2,735. 00
From sale of—	
Gas	7,815. 17
Coke	1,139. 63
Coal tar	663. 78
Miscellaneous	665. 95
	10,284. 53
Total to be accounted for	14,081. 58
Disbursed	10,964. 12
On hand June 30, 1903	3,117. 46

J. B. BELLINGER,
Major and Quartermaster, U. S. Army,
Treasurer Special Contingent Fund, U. S. Military Academy.

WEST POINT, N. Y., July 11, 1903.

SUPERINTENDENT UNITED STATES MILITARY ACADEMY. 73

D.—Statement of gas manufactured from July 1, 1901, to June 30, 1903, showing quantity of coal and oil used in manufacture.

Month.	Coal used.	Gas made.	Oil used.
1901.	<i>Pounds.</i>	<i>Cubic feet.</i>	<i>Gallons.</i>
July.....	188,300	929,700	372
August.....	192,400	925,600	372
September.....	347,300	1,361,800	801
October.....	392,800	1,896,600	620
November.....	498,900	2,065,600	600
December.....	581,600	2,540,400	620
1902.			
January.....	594,800	2,611,600	620
February.....	514,800	2,247,900	560
March.....	458,000	2,044,300	590
April.....	403,800	1,818,500	420
May.....	338,900	1,573,500	350
June.....	300,300	1,429,300	200
Twelve months.....	4,811,700	21,424,600	6,125
1902.			
July.....	252,700	1,117,100	155
August.....	259,300	1,186,200	155
September.....	382,500	1,686,600	316
October.....	456,900	2,006,100	465
November.....	536,800	2,315,000	600
December.....	649,900	2,776,000	640
1903.			
January.....	642,500	2,845,600	558
February.....	518,800	2,361,800	520
March.....	500,600	2,303,000	385
April.....	427,100	1,906,000	300
May.....	338,600	1,541,900	310
June.....	335,300	1,547,300	300
Twelve months.....	5,301,000	23,652,600	4,704
	4,811,700	21,424,600	
Increase.....	489,300	2,228,000	

Respectfully submitted.

J. B. BELLINGER,
Major and Quartermaster, U. S. Army,
Director of Gas Works, U. S. Military Academy.

WEST POINT, N. Y., July 11, 1903.

APPENDIX G.

REPORT OF THE INSTRUCTOR OF ORDNANCE AND GUNNERY.

WEST POINT, N. Y., *May 20, 1903.*

SIR: In compliance with instructions in circular No. 15, of April 14, 1903, I have the honor to submit the following report of the principal operations in and connected with the department of ordnance and gunnery, the office of post ordnance officer, etc., at the United States Military Academy during the fiscal year ending June 30, 1903:

LABORATORY.

Beyond the necessary repair work, painting, etc., to keep the laboratory buildings properly preserved, nothing specially noteworthy has been done at the laboratory during this fiscal year, except that metal ceilings to replace plaster, which was falling in many places, have been installed in the principal rooms.

The routine work of caring for and preserving the service and obsolete ordnance, trophy guns, etc., at the post; the repair and supply of ordnance material necessary in the practical instruction of cadets in their various duties, and the preparation of ammunition, blank cartridges, and fireworks have all been satisfactorily performed.

The ordnance detachment continues in a high state of efficiency. The daily details from the detachment for the post guard have been required during the year. It is hoped that this requirement may soon be modified, for it so reduces the available strength of the small detachment that, with the exception of the winter months, it interferes with the satisfactory performance of all the other varied duties.

MUSEUM.

Contributions continue to be made to the interesting and valuable collection which is exhibited in the ordnance museum. Additions during the year, besides articles contributed by officers of the army in the Philippines, have been: By the family of the late Gen. William Ludlow, interesting articles from Japan, Egypt, Cuba, and Nicaragua; by the daughter of the late Capt. J. B. Scott, a handsome sword presented to her father in 1847 by the citizens of New Haven, Conn.; by Señor Antonio San Miguel, of Habana, a handsome Toledo blade from his own collection; by Maj. Lea Febiger, a case used by Gen. George H. Thomas; and by the widow of the late W. R. Whitehead, M. D., of Denver, Colo., a very complete "collection of old-time arms, armor, etc.," consisting of nearly 200 items, nearly all of which differ from anything now on hand.

In my report for the fiscal year ending June 30, 1902, I stated:

"The museum is very much crowded, and to provide space for the proper care and exhibition of the late additions it has been necessary to remove and store many older and less interesting exhibits; many of these are, however, of sufficient interest to be shown.

"In addition to its value for purposes of instruction, the museum is one of the most interesting features of the post to the thousands of citizens who visit it every year, and more room should be provided for this valuable collection, at the earliest possible date, to permit the proper exhibition of all the articles on hand."

The conditions then stated become more pronounced as time passes and emphasize the necessity of providing more room at the earliest possible date. I can not too strongly invite attention to this matter and commend it to the most serious consideration.

During the past year, estimating the ten days from this date to May 31, the museum has been visited by more than 61,000 persons. The greatest number of visitors in any one day was 3,842. During the summer there were about 40,000 visitors, in the spring and autumn the average was about 6,000 per month, and during the winter about 500 per month. Needed repairs and additions to models, cases, etc., have been made during the year.

MODELS.

The models of machines and of service cannon, carriages, projectiles, etc., used in cadet instruction in this department have been added to during the year by the manufacture of one complete drill press, one-fifth size, and a model of the boring and turning lathe used in manufacture of large guns is now in a well-advanced stage of completion.

In addition there have been furnished by the Ordnance Department for use in connection with the theoretical instruction of cadets—

- 1 shrapnel, 3-inch, sectionalized.
- 10 boards fuzes of the the various types in service.
- 1 board axial and radial vent friction primers.
- 1 board electric primers.
- 1 board electric primers, obturating.
- 1 board friction primers, obturating.
- 2 boards combined electric-friction primers, obturating, for seacoast guns and mortars.
- 2 boards friction primers, obturating, siege, model 1902.
- 1 board, caliber .30, cartridge and parts.
- 2 cartridge cases, 6-pounder, sectionalized.
- 1 shrapnel, 3.2-inch, B. L. R., sectionalized.
- 1 sample breech mechanism of United States magazine rifle, caliber .30, model 1898, skeletonized.

And the following has been added to the post ordnance material for use in practical instruction of cadets:

- 4 artillery drill cartridges for 75-millimeter Vickers-Maxim mountain gun.
- 1 1-pounder subcaliber gun, complete, with fixtures, accessories, and spare parts for 8-inch B. L. R., model 1888.
- 2 subcaliber attachments, caliber .30, complete, for 5-inch siege rifle, model 1898.
- 2 subcaliber attachments, caliber .30, complete, for 7-inch siege howitzer, model 1890.

Very respectfully,

F. E. HOBBS,

Captain, Ordnance Department, U. S. Army, Instructor Ordnance and Gunnery.
The ADJUTANT U. S. MILITARY ACADEMY.

APPENDIX H.

REPORT OF THE LIBRARIAN.

UNITED STATES MILITARY ACADEMY,
West Point, N. Y., May 20, 1903.

SIR: I have the honor to submit the following report upon the work of the library for the period August 20, 1902, to May 20, 1903, with some data relating to the period since November 1, 1901, when I reported for duty:

Personnel.—The working force has consisted of the librarian and four enlisted men, one of whom acts as janitor. The Military Academy appropriation bill for the fiscal year 1902-3 provided for a librarian and a librarian's assistant. Under its provisions Dr. Edward S. Holden was appointed by the Secretary of War to the former position in July, 1902. Mr. W. L. Ostrander was appointed assistant on May 18, 1903. The force available during the past year has not been sufficient to do even the routine work of the library in a thorough manner, and therefore only the most important matters have been attended to, while others have necessarily been put to one side for the present.

Users of the library.—The library is used by 81 officers attached to the academy, by their families, by 446 cadets, by 20 enlisted men, and by 35 civilians to whom its privileges have been extended by order of the Superintendent.

Number of books.—The number of books and pamphlets reported in the library on November 1, 1901, was about 46,000. This number included many duplicates. It has not yet been possible to make a count of the books, nor will it be advisable to do so until the whole collection has been rearranged.

Accessions since November 1, 1901.—Four thousand seven hundred and eighty-eight books, pamphlets, maps, etc., have been added to the library since November 1, 1901. Periodicals purchased are not included in this count. Substantially every book received has been catalogued, and is now on the shelves in use.

Periodicals.—The list of periodicals subscribed for was thoroughly revised by the library committee in the autumn of 1902, after consulting many of the officers of the post. We now subscribe for 142 periodicals which will be continued year by year. Most of these will be bound and preserved on our shelves. A few are kept for a year only and then turned over to the post library for enlisted men. A list of all the periodicals received by this library, by the department libraries, and by the cadet societies (Young Men's Christian Association and Dialectic), by gift and subscription, includes 265 periodicals. The literature and science of to-day are thus fully available to our readers.

Recent fiction.—The library subscribes to the Tabard-Inn Library of Philadelphia, and has the right to keep 125 of the Tabard-Inn books in circulation, changing any or all of them once monthly. The plan has worked well on the whole. We are able to see the newest books, and are freed from the necessity of lumbering up our shelves with books many of which are of trifling literary value. There are 446 cadets in the corps; 125 new novels in circulation among them would seem to be a sufficient provision. All standard works of English fiction, and many in French, Spanish, Italian, and German, are owned by the library of the United States Military Academy.

Statistics of circulation.—The force of the library has been too much occupied to permit of the collection of full statistics of circulation. The following items will be of interest:

On March 6, 1903, the library was visited by 12 officers, 52 cadets, 23 ladies, 18 civilians, and 2 children; total, 107.

On March 14, 1903, books were issued to 18 officers, 26 cadets, and 6 civilians; total, 50.

During the months of November, 1902, to March, 1903, the corresponding numbers were considerably larger.

During the month of November, 1901, 750 books were drawn from the library by cadets, as follows:

	Volumes.
Fiction (usually the same books over and over again).....	600
History and literature (including some standard fiction)	105
Science (usually text-books)	18
Military	27

The data for other analyses of the kind are on file, but have not been discussed for lack of time.

Library committee.—The library is under the general charge of a library committee of four members of the academic board, viz, the professors of drawing, chemistry, modern languages, and engineering. Their advice is constantly at command, and on all important questions advice has been sought from and freely given by other members of the board and by officers on duty in the departments.

Lectures to cadets.—By direction of the Superintendent a lecture to the fourth class of cadets was given on October 11, 1902, by the librarian, on the best methods of utilizing the library's collections by cadets during their term at the academy. The librarian has been freely consulted by cadets in respect to their reading during the year.

Special exhibitions of books.—Special books have been brought together in the main room for easy consultation by cadets at various times. Collections of the sort have been made for the class for Bible study; a collection of historical novels was made in December for the use of cadets studying history, etc. The new books are placed together in special cases, where they remain for several months, so that every cadet may see and handle all accessions.

Engraved portraits and photographs of graduates.—The library owns the class albums of graduates since 1857 (with the exception of 1858, 1860, 1861, 1862, 1867, 1872, 1873, and 1874) and a large number of groups and single photographic portraits not yet classified. During the year an effort was made to secure for the association of graduates a copy of an engraved portrait of each graduate, and such portraits were obtained for 451 out of our 4,000 graduates.

Permanent exhibition of memorabilia.—Frames in the library have been arranged to contain portraits, maps, manuscripts, and other memorabilia relating to West Point, to the academy, to the Revolution, to the civil war, to the war with Mexico, and to the Spanish-American war. Most of these are the property of the library. Many are loans. Every precaution is taken to insure the safety of these valuable mementos.

Photographs and illustrated books.—There is no quicker way to exhibit to the young gentlemen of the Corps of Cadets a picture of the world from which their isolation and their duties shut them out than to display on the library tables and walls collections of photographs, engravings, and maps. Information received through the eye is easily acquired and long retained. During the year many such collections have been exhibited, of which two deserve special mention. The first is contained in 32 albums of photographs of the Philippines and China presented by the Chief of Engineers United States Army. The second is a large collection of photographs of the masterpieces of Italian art. The method thus put into operation can be carried very much further with great advantage.

Military manuscripts.—An earnest effort has been made to collect and to examine military manuscripts, especially such as relate to the history of West Point and the United States Military Academy. The principal series are:

The Cullum manuscripts in the possession of the Association of Graduates United States Military Academy. These manuscripts have been carefully examined by Capt. Bertram C. Gilbert, Artillery Corps, and by myself. They include many letters by Colonel Thayer.

The Swift manuscripts loaned to the United States Military Academy by the heirs of Gen. J. G. Swift, first graduate (1802) of the United States Military Academy. These priceless papers were, by the great kindness of General Swift's heirs, deposited in the library in October and November, 1902, and have been thoroughly examined by Captain Gilbert and myself.

Miscellaneous manuscripts, orderly books of the Revolution, etc., in the library of the academy have been thoroughly searched by Capt. Gordon Heiner, Artillery Corps, and by myself.

Manuscript records of the Dialectic Society United States Military Academy, ditto.

The manuscript papers (returns, reports, orderly books, letters, etc.), written at West Point in the years 1795 to 1829, which were transferred (in February, 1903), from the records of the Schuylkill Arsenal to the United States Military Academy,

through the courtesy of Capt. John T. Knight, U. S. Army, by authority of the Quartermaster-General and of the Adjutant-General U. S. Army, have been searched as thoroughly as time allowed, by myself.

Manuscripts, orderly books, and regimental returns of West Point during the Revolution belonging to the Pocumtuc Valley Memorial Association of Deerfield, Mass., were most kindly loaned to us for examination in 1903, through the kindness of the president and secretary of the association, and have been searched by myself.

The General Orders, Headquarters United States Military Academy, from February 19, 1838 (the date of the disastrous fire which destroyed the records of the academy) to 1857, were examined by Lieut. A. F. Casad, Artillery Corps, during November, 1902. Capt. Gordon Heiner, Artillery Corps, has been good enough to continue this examination from 1857 to 1902; and Capt. Frederick W. Sladen, Fourteenth Infantry, has gone over the same records independently.

Capt. H. M. Reeve, Third Infantry, U. S. Army, during the summer of 1902, thoroughly searched the manuscripts of the State Department and of the library of Congress and made accurate copies of all documents relating to the academy, which he kindly transmitted to us.

The library hopes to receive shortly the manuscript papers of Gen. George B. McClellan; the manuscript papers of Gen. H. W. Halleck; a number of the manuscript papers of Gen. W. T. Sherman; the manuscript papers of Gen. W. S. Hancock; the manuscript papers of Capt. Alden Partridge, superintendent United States Military Academy 1814-1817; the manuscript papers of Colonel Gratiot, inspector United States Military Academy 1828 to 1838.

Bibliographies.—From the foregoing and other materials I have made the following bibliographies, which are now in manuscript:

1. A bibliography of West Point 1694-1902, its history, maps, views, etc. (about 900 titles).
2. A bibliography of the United States Military Academy 1776-1902 (about 2,000 titles).
3. A bibliography of the writings of all graduates United States Military Academy from 1802 to 1902, about 4,000 in number, including list of their portraits and statues and references to their obituary notices (about 17,000 titles).
4. A list of the names of all members of the Board of Visitors United States Military Academy 1819 to 1902 (about 1,000 titles). Total, about 21,000 cards.

Shelf room.—The report of Captain Kuhn (1902), under whose supervision the library was fitted with shelves, says that more stacks will soon be needed. That time has now arrived, and it is hoped to supply the most pressing wants during the summer of 1903. When the appropriation for building the new academy becomes available it is hoped that funds may be allotted for the following pressing needs:

1. A fireproof floor to the attic.
2. Fireproof shelving throughout the attic.
3. Wall cases to be continued to the ceilings throughout library.
4. The basement to be fitted with fireproof stacks.

Maps and charts.—Our collection has been arranged, catalogued when necessary, and made available for convenient reference. Some 1,300 maps have been backed with linen during the year. A great number of State, county, and road maps (including bicycle routes) has been added. This department of the library still requires many additions and improvements. If the library had a room with wall spaces suitable for the display of maps and charts much could be done in the way of educating the cadets in military geography. This is an important matter as there is no such course in our curriculum.

Congressional documents.—All our Congressional documents are now bound and arranged on the shelves in order. Steps have been taken to complete our series which is already very full.

Officer's study room.—A large room is devoted solely to the use of officers. Here all purely military works are kept (duplicates of the more important are shelved in the lower rooms). The study room is a valuable innovation and it has been in constant use by instructors engaged looking up matters connected with their teaching and by officers working on their own account or in special volunteer work in aid of the library.

Volunteer work of officers.—Seeing the necessity for skilled assistance several officers have volunteered to do special pieces of work in aid of the library. Complete author-indexes to various military journals have been made by Captain Willcox, Captain Roberts, and Capt. R. C. Davis. The bibliography regularly published in the journal of the United States artillery has been each month placed on cards by Captain Bowley. A complete card catalogue of all campaigns and battles is in process of making by Lieutenant Jewell. Other valuable volunteer work by officers is mentioned under the head of military manuscripts (above).

Paul Larned, candidate United States Military Academy, has examined several thousand portraits of graduates, and aided in the selection of the best.

Binding.—The binding of our books is very much in arrears. Since November 1, 1901, about \$2,400 has been expended for the purpose. It could be more economically done if the library possessed a bindery of its own. One workman would be sufficient.

Catalogue department.—Very much remains to be done to make our catalogues helpful to our special class of readers. The subject catalogue, in particular, requires extensive additions. All books received since November, 1901 have been catalogued under all the appropriate catchwords. The author catalogue was separated from the subject catalogue during the winter of 1902-3. During the year the principal cards of nearly every book have been written by Corporal Maher. The books with the cards are then sent to the librarian's desk and the cards are revised and completed by him before being placed on the shelves. I desire to call especial attention to the very intelligent and faithful work of Corporal Maher in this department. At least 21,000 cards have been added to the catalogue since November, 1901.

The Dewey system is followed in the classification except for fiction, biography, periodicals, and military works. The present classification of the latter class of books is entirely unsatisfactory. I have therefore worked out a new scheme, on about 10,000 cards, which is now in the hands of Doctor Dewey. It has been revised and criticised by various officers of the army at West Point and elsewhere, and it has been compared with the scheme of the International Bibliographic Bureau by Captain Willcox of the Artillery Corps. To all of these gentlemen our best thanks are due.

Libraries of the departments, United States Military Academy.—Each of the departments of the academy has a special library, kept in its own rooms, where the books are immediately available to the instructors. With the cooperation of the heads of the departments it is hoped to make a complete card catalogue of all such books (on yellow cards) and to insert the cards in their proper order among the (white) cards of our own catalogue. In this way a complete inventory of the books owned by the Government at this post will be obtained; this list will be very useful to officers; and it will be an important guide to the United States Military Academy library in its purchases. About 1,000 cards have already been written.

Library of the association of graduates.—By a resolution of the council, the association of graduates voted to lend its collection of books to the United States Military Academy library. This will be kept in a case of its own in the officers' study, where it will be more available to graduates than in its former narrow quarters in Memorial Hall.

Books relating to West Point.—A special effort has been made to purchase every book and pamphlet relating to the history of West Point and of the United States Military Academy, and to collect and bind all books and manuscripts of the sort already in our collections. The case devoted to this special department now contains 341 bound volumes.

Additions to the building and fixtures.—The quartermaster United States Military Academy has taken especial interest in putting the library building and its fittings into convenient and safe condition, and a very considerable amount of work has been done under his direction during the year. The attic rooms have been floored and shelved (with wood). Temporary wooden shelves have been placed on the tops of the steel wall cases (and also on the tops of the steel stacks in the officers' study by Captain Kuhn, Corps of Engineers). All the chandeliers of the main room have been lowered 4 feet, with excellent results. Gas has been introduced into the basement and the attic. A number of new electric lamps have been put in. New steam coils have been provided for the rooms with a north exposure, etc. All these additions were necessary, and it has been a great advantage to the library to have them so promptly made.

Memorial volume.—A volume to be memorial of the centennial of the academy has been edited, under the direction of the academic board, by myself. The manuscript is now very nearly completed. It is to contain the addresses made at the jubilee, and chapters covering the services of the graduates during the period 1802-1902, etc. A great part of my own time during the past year has been given to the editorial work.

Service.—The service of the library has been performed intelligently and cheerfully, under some unavoidable disadvantages, by Corporal Maher and Privates Brownley and Boyle, library attendants, and by Private Cody, janitor. The addition of a competent clerk to the force (in May, 1903), will enable the library work to be systematized and extended.

Gifts.—At the end of this report a list of presents received during the year is given. Special mention should be made of gifts from Mr. S. P. Avery, of New York, and for his generous permission to copy his splendid portrait of Washington (the Gibbs-

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Channing portrait by Gilbert Stuart), which has never before been copied; and for the gift of the Army and Navy of the United States (edition de luxe) from Loyall Farragut, esq., United States Military Academy, 1868.

Conclusion.—The experience of the past year has shown that the library may be made very useful to the cadets of the academy. These young gentlemen are at West Point during a very impressionable part of their lives, and they see only such things as are exhibited to them here. The work of the academic departments can be enforced, and to a slight degree, supplemented, by the library; and at least a glimpse of the world outside of the experience of cadets can be exhibited through its books. With the cooperation of the academic board a beginning has been made in this direction, which promises well for the future.

Respectfully submitted.

EDWARD S. HOLDEN, *Librarian.*

The SUPERINTENDENT UNITED STATES MILITARY ACADEMY.

List of gifts to the library.

Name of donor.	Books.	Pam- phlets.	Charts.
Adjutant-General United States Army.....	5		
Adjutant-general State of North Carolina.....	2		
Adjutant-general State of South Carolina.....	1		
Adjutant-general State of Connecticut.....	1		
Adjutant-general State of Florida.....	1		
Adjutant-general State of Michigan.....	1		
Adjutant-general State of Virginia.....	4		
Adjutant-general State of West Virginia.....	1		
Adjutant-general State of Rhode Island.....	1		
Adjutant-general State of New Hampshire.....	1		
Adjutant-General's Department.....	2		
Altstaetter, Lieut. F. W. (number of maps).			
American Scenic and Historical Preservation Society (1 map).			
Army Officers Athletic Association.....		2	
Avery, S. P., New York City (1 engraving).....	1		
Barrie, George, & Son.....		500	
Bass, Colonel.....	2		
Bellinger, Maj. J. B.....	1		
Bigelow, Hon. John.....	1		
Black, W. T.....	1		
Borden, F. W.....	2		
Bower, G. M.....	1		
Boynton, H. V.....	1		
Bureau of Insular Affairs, War Department.....	2		
Bureau of Navigation, United States Navy.....	22	1	
Chief of Engineers United States Army (1,152 photographs).....		1	6
Chief Signal Officer United States Army.....	4		
Civil Service Commissioners United States.....	1		
Commandant School of Submarine Defense, Fort Totten, N. Y.....		1	
Commissary-General United States Army.....		1	
Commissioner of Navigation United States.....	4		
Callan, Captain, U. S. Army.....		2	
Cary, Clarence, New York City.....		1	
Charnowitz, H. I., Newburg, N. Y.....		1	
Clark, Thomas F., New York City (1 map).....			
Cooper, Theodore, New York City.....	1		
Cormack, J. D.....	1		
Department of Agriculture United States.....	1		
Department of drawing United States Military Academy.....		4	
Department of modern languages United States Military Academy.....	2	3	
Department of ordnance and gunnery United States Military Academy.....		2	
Department of State United States.....	1		
Director American Museum of Natural History, New York.....		5	
Director of University State of New York.....	2		
Director of Washburn Observatory, Wisconsin.....	1		
Director of Yerkes Observatory, Wisconsin.....	1		
Dexter, Edwin G.....		1	
Dudley, Colonel, U. S. Army.....		3	
Erie R. R. Co.....		2	
Fidelity and Casualty Co., New York.....		1	
Farragut, Loyall, New York City.....	1		
Freeman, John R.....	1		
Gettysburg National Military Park Commission.....	1		
Gosman, Doctor, U. S. Army.....	1		
Grandgent, Chas. H.....		1	
Greble, Captain.....	15		
Green, Hon. A. H.....	1		
Guayaquil and Quito R. R. Co. (2 maps).....			

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List of gifts to the library—Continued.

Name of donor.	Books.	Pam- phlets.	Charts.
Headquarters United States Military Academy.....		4	
Hamilton, James (1 newspaper).....			
Holden, Dr. E. S.....	16	123	
Huse, Colonel, Highland Falls.....	1		
Institution of Civil Engineers, London.....	2		
Judge-Advocate-General United States Army.....		1	
Kemble, G. (manuscript letters).....			
King, Gen. Charles.....		1	
Larned, Professor.....	1		
Lawson, T. W.....	1		
Loubat, Duc de.....		3	
Maynard, Geo., New York.....	1		
Marvin, Frederick R.....	1		
Miller, Capt. H. W., U. S. Army.....		1	
Moore, Capt. J. K., U. S. Army.....		1	
Murray, T. H.....		1	
Phipps, Col. F. H., U. S. Army.....		1	
Pinchot, Gifford.....	1		
Quartermaster-General United States Army.....	1	1	
Robinson, Capt. Wirt, U. S. Army.....		1	
Roebbing, Col. W. A.....	1		
Royal Society of London.....	8		
Secretary Board on Geographic Names United States.....	1		
Secretary of the Navy United States.....	2		
Secretary of the Treasury United States.....	1		
Smithsonian Institution.....	1	1	
State historian New York.....	2		
Superintendent of Documents United States.....	1		
Simpson, Col. W. A.....			1
Summerlin, Captain, U. S. Army (1 medal).....			
Thompson, Capt. J. K., U. S. Army.....	1		
Thompson, Gilbert, Washington.....	1		
Tripp, Mr., West Point (1 engraving).....	1		
United States Civil Service Commission.....		1	
United States Coast and Geodetic Survey.....	2		
United States Commission of Fish and Fisheries.....	1		
United States Geological Survey.....	3		
United States Infantry and Cavalry School.....		1	
United States Naval Observatory.....		1	
University of Chicago.....		1	
Volney Streamer.....	3		
Wagner, Col. A. L., U. S. Army.....		1	
Walker, Benj. A. (1 pen-and-ink drawing).....			
Walsh, Rev. W. (1 engraving).....	4		
Ward, Wm., West Point (1 old newspaper, 1800; 1 map, 1836; quill pen used by Gen. Winfield Scott).....		62	
Wilson, Gen. James H.....	1		
Wood, Thomas C.....	1		

APPENDIX I.

RULES GOVERNING ARCHITECTURAL COMPETITION.

IMPROVEMENTS AT WEST POINT.

HEADQUARTERS UNITED STATES MILITARY ACADEMY,
West Point, N. Y., February 3, 1903.

The following compilation of the rules approved by the honorable Secretary of War to govern the limited architectural competition for a preliminary general plan for improvements at West Point, N. Y., is published for the information and convenience of competitors and of all others concerned.

A. L. MILLS,
Colonel, U. S. Army, Superintendent.

I. (Extract, act of Congress approved June 28, 1902.) "To increase the efficiency of the United States Military Academy at West Point, New York, and to provide for the enlargement of buildings and for other necessary works of improvement in connection therewith, and to provide for an increased water supply at a cost not to exceed one hundred thousand dollars, made necessary by the increased number of cadets now authorized by law, immediately available and to remain so until expended, two million dollars: *Provided*, That before any part of this amount is expended, except so much as may be necessary to provide an immediate increased water supply; to install a heating and lighting plant, and to complete the improvements begun on the cadet mess building, complete plans shall be prepared and approved by the Secretary of War, covering all necessary buildings and improvements at West Point, and for each and every purpose connected therewith, which plans shall involve a total expenditure of not more than five million five hundred thousand dollars, including the sum herein appropriated: *Provided further*, That after the preparation and approval of the plans herein provided, the Secretary of War is authorized to enter into a contract or contracts for any part or all of the improvements herein authorized within the said limit of cost, to be paid for from the appropriations annually made for this purpose: *Provided further*, That no money shall be expended or obligation incurred for architects after the plans for improvements above provided for have been approved by the Secretary of War, except that the Secretary of War is hereby authorized to employ, in his discretion, a consulting architect at a compensation not exceeding five thousand dollars per annum."

II. In carrying the above enactment into effect the Secretary of War wishes to secure a plan for the improvements which shall at the same time meet the practical requirements of the Military Academy and provide for a treatment worthy of the historic associations and natural beauties of the site. The Secretary of War names the following conditions which must be met:

The plan must provide for additional cadet barracks, academic building, chapel, post headquarters, headquarters of the corps of cadets, bachelor officers' quarters, riding hall, artillery barracks, stables, and gun sheds, cavalry barracks and stables, hotel, and many other buildings of minor importance.

It must afford opportunity for future extension and enlargement as the institution shall be enlarged with the growth of the country.

It must locate the buildings habitually occupied by the cadets so conveniently near each other as to meet the requirements of efficient administration and supervision, health, comfort, and economy of time.

It must maintain undiminished the present plain or campus for infantry instruction.

It must produce a general result in harmony with a number of the present buildings which are to be retained, such as the cadet barracks, the academic building, the library, the cadet mess, the cadet hospital, the gymnasium, the memorial hall, and the officers' mess.

It must be capable of execution at such a cost that the entire work now specifically provided for, including all the items mentioned in the statute, will not cost more than \$5,000,000, thus leaving a margin of \$500,000 against contingencies.

III. The preliminary general plan desired is required to show a proposed arrangement of buildings and treatment of the ground to meet the various requirements of the Academy, together with an indication of the architectural treatment of the separate buildings. In preparing his plan each competitor is at liberty to associate with himself a landscape architect or gardener and to submit the plan in his own name or the joint names, as he may prefer.

IV. The Secretary of War has appointed the following jury to give him professional advice in making the award of the competition: Lieut. Gen. John M. Schofield, Col. Albert L. Mills; Mr. George B. Post, architect; Mr. Walter Cook, architect; Mr. Cass Gilbert, architect.

V. The exhibits in the competition shall be limited to the following:

(A) The Superintendent of the Academy has furnished each competitor with a contour map of West Point drawn to a scale of 1 inch to 150 feet. On an enlargement of this map,^a as described in section B, each competitor shall show the general disposition of the below-mentioned essential buildings. In addition, the map shall show the treatment of the grounds and the principal public buildings to be retained, which are the cadet barracks, academic building, library, cadet mess, cadet hospital, gymnasium, memorial hall, and the officers' mess.

1. Additional cadet barracks.
2. New academic building.
3. Chapel.
4. Riding hall.
5. Post headquarters and museum.
6. Administration building of the corps of cadets.
7. Building for contagious diseases, adjacent to cadet hospital.
8. Cadet store.
9. Post-office, telegraph and telephone exchange building.
10. Building for bachelor officers' quarters.
11. Quarters for married officers.
12. Main guardhouse.
13. Post-exchange and commissary building.
14. Cavalry barracks.
15. Cavalry stables.
16. Artillery barracks.
17. Artillery stables and gun shed.
18. Cadet laundry.
19. Fire-engine houses.
20. Heating and lighting plant.
21. Hotel for 200 guests.

(B) A plan mounted on cloth showing the development of the grounds and the buildings proposed, as contained within the boundary lines of the map described in Section A and drawn to the scale of 100 feet equal to 1 inch; also five sections or elevations of any portion of these same grounds showing elevations of buildings suggested, at a scale of 25 feet equal to 1 inch. The lines on which these sections are taken are to be chosen by each competitor in such a way and to be of such length as to best explain, in his judgment, the general composition of his design, and the lines through which these sections have been taken are to be indicated on the plan.

The plan shall be drawn in ink and rendered in black and white; brush work; shadows may be cast, and all buildings or structural features shall be tinted with a flat light wash of yellow ochre.

The five sections or elevations shall be rendered in black and white; brush work; all shadows cast.

No perspective drawings are to be submitted.

(C) Drawings shall be submitted of the buildings numbered above as follows—3 and 4.

These drawings shall show a ground plan and elevations of two dissimilar fronts. One longitudinal section of the chapel shall be submitted.

The drawings described in this section shall be on a scale of one-eighth of an inch equals 1 foot.

All of the drawings called for in this section shall be rendered as desired by competitors, with shadows cast at an angle of 45° with vertical and horizontal planes of projection. Light will be assumed to fall from the left-hand upper angle and from front to rear. The drawings may be rendered with accessories of landscape at the option of each competitor, and a single human figure may be introduced to give scale.

All drawings described in this section shall be mounted on stretchers or heavy

^a Competitors may, if they desire, add to this map additional ground at the north-west part of the post.

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binder boards with gray border. It is desired that these drawings shall approximate as nearly as possible the same size, and that the plain border outside the inclosing line shall not exceed 4 inches in width. Drawings of elevations above required shall be kept separate, although drawings of the two elevations of the same building may appear on the same sheet. Drawings of different buildings shall not appear on the same sheet, except for the purpose of showing association, and in such case the associated building shall be shown in outline only and tinted within this outline a gray wash.

VI. In the solution of the problem competitors may use their discretion in showing the change or removal of any buildings, notwithstanding it is stated in Paragraph II of this programme that certain designated buildings are to be retained. A competitor, however, making use of this authority does so at his own risk as to how much his chance of award is thereby affected.

VII. Textual description shall accompany the work of each competitor. It shall be either typewritten or printed, and should be as concise as possible. It shall embrace, besides comments on individual buildings, a discussion of the general scheme, including the provisions for possible future extension and shall outline the proposed method of procedure and state in general terms the material of which it is proposed to erect the buildings, and shall give a statement of the approximate number of cubic feet in each building in the design, the altitudes being measured from the bottom of the foundations to the average roof lines.

VIII. No other drawings than those herein described shall be submitted. The submission of more than one design for any building or of alternative designs for a portion of a building is prohibited.

IX. The competition shall be anonymous. Each set of drawings with its accompanying description shall be securely wrapped and sealed and in typewriting addressed to the Superintendent of the United States Military Academy, West Point, New York, plainly and conspicuously marked "Drawings for U. S. Military Academy Competition." Neither drawings nor wrapper shall have any distinguishing mark or device which might disclose the identity of the competitor, each of whom shall enclose with his drawings a plain white, opaque, unmarked envelope within which he shall enclose a card bearing his name and address. The envelope shall be securely sealed with a plain wax seal having no impression or identifying mark upon it. The Superintendent of the Military Academy shall, at a designated time, open each package and shall place a number upon the envelope containing the name and address of competitor, and shall place the same number upon every inclosure within the package. He shall preserve unopened the envelopes until after the final award. The packages containing drawings of competitors shall be sent in time to reach their destination on or before noon May 15, 1903.

The jury to advise the Secretary of War in making the award shall recommend to him that any set of drawings as to which the foregoing conditions have not been observed or which deviate in essential respects from the requirements of these rules shall be placed out of competition and that no compensation therefor be made.

X. During the competition there shall be no communications relating to its subject-matter between any of the competitors and any individual connected with the Military Academy, except in writing and through the Superintendent of the academy. All communications shall be addressed to the Superintendent United States Military Academy. There shall be no oral communication of this character unless authorized by the Superintendent and under conditions prescribed by him. Any information given by the Superintendent, whether oral or written, shall be free to all competitors, and when given to one shall be immediately issued to all others, if not already in their possession. The Superintendent will be glad to furnish any information that it is practicable to give, provided the request for such information reaches him not later than April 1, 1903, which is fixed as the date for closing all inquiry, and competitors are invited to freely consult him and to visit the buildings and grounds.

XI. No drawing or subject-matter shall be made public until after the award by the Secretary of War, and not then without consent of its author.

XII. The compensation of \$2,000 for each architect, or firm of architects, who presents a plan in response to the invitation contained in the letter of the Superintendent of October 20, 1902, and in accordance with these rules, shall be in full payment for all charges for their services in making and presenting said plan, including any expenses for travel.

XIII. The Superintendent of the Military Academy shall return the drawings of unsuccessful competitors to their owners immediately after the award by the Secretary of War, and no matter original to any competitor shall be made use of without the owner's consent and suitable compensation therefor, and the question of such

original feature and the compensation therefor shall be determined by the jury of award, subject to the approval of the Secretary of War.

XIV. The successful competitor shall furnish the Superintendent of the Military Academy the original drawings, or careful tracings or prints of the drawings, and textual descriptions of his designs as soon as possible after the competition.

XV. It is understood that the architect producing the accepted preliminary plan shall, in developing it into the complete plan described by the statute, make all necessary preliminary studies, general working drawings, and specifications required for the erection of all the buildings not included in the competition, compensation therefor to be on the same basis as that of the principal buildings.

XVI. It is also understood that it shall be a part of the work of the consulting architect to prepare the general working drawings, specifications, and details of the various modifications of, repairs and additions to existing buildings; also for the roads and changes in grounds that will be required in carrying out the general scheme of improvements.

The compensation to be paid the successful competitor in executing his design and planning buildings is fixed at $3\frac{1}{2}$ per cent of the cost of the buildings, to be paid upon the approval of the complete plan by the Secretary of War, or as soon thereafter as the cost can be ascertained. The Government will also undertake that the consulting architect, to be appointed at a yearly salary of \$5,000, shall be the successful competitor, or some one connected with his office. The Government will pay such traveling and office expenses as may be incurred by the consulting architect in the performance of his duties in connection with the execution of the plans; but this expense, together with the salary of the consulting architect, will not in any case be allowed to exceed $1\frac{1}{2}$ per cent of the cost of the buildings.

XVII. Competitors are cautioned that the report of the board of officers, already furnished them, is intended to show the general scope of the improvements which are projected at the Military Academy and the practical requirements which are to be met. None of the statements or expressions in said report or in the pamphlets and other printed matter furnished competitors, either as to location or character of buildings, or as to the treatment of the subject, are to be regarded as in any degree binding upon competitors. With the exception of the practical requirements given in the report of the board of officers, the matters referred to must be regarded only as individual expressions of opinion.

both line and staff, in which they are not commissioned in time of peace. For this reason we have established upon the base of the post schools a system of special schools, which provide for the advanced education of officers of the cavalry and field artillery, of the coast artillery, including the art of submarine warfare, of the engineer troops, and of the medical corps. An examination of their curricula shows that already the latter can be modified by eliminating those subjects that can properly be taught in the post schools and without proficiency in which no officer should be permitted to enter a special school. Thus the training in the special schools can, if desired, be carried even further without extending the time for the course.

Finally, there is another school with a well-defined object—the General Service and Staff College. This is in reality a special school for the advanced training of selected officers. It is recruited from the same source as the special schools, i. e., from those who have taken the officers' post-school course, but with more particular reference to those who have distinguished themselves in this course. The inevitable tendency will result in time in taking all students at the special schools from the class of "distinguished" eligibles. The General Service and Staff College differentiates itself from the special schools in that officers are eligible to it from all branches of the service. Hence, also, its training will not be to fit officers for high-grade work in a special arm, but for general utility in the administration and handling of higher commands of all arms. In other words, if it be what its name indicates, it will be a special school for training officers of all arms for field service in any staff, corps, or department, as well as in the General Staff.

The special schools, like the post schools, perform the additional function, under section 16 of the act above referred to, of training officers of the organized militia for the performance of the more special and advanced duties in the administration and maneuvering of an army and thus increasing the number of such officers available in time of war. Before taking such an advanced course they should be required to be proficient in the courses followed at the post schools.

Leaving out of consideration for the moment the Military Academy, the training at which is antecedent to a commission, and the War College, the foregoing is an outline of our system of military education. It seems evident that it exhausts the useful possibilities of scholastic professional training. It is impossible to devise a curriculum which shall not involve a repetition of what is taught in one or another or in all of the above schools. We may, it is true, have more mathematics, more problems in engineering, more illustrations of the principles of grand tactics and strategy, but for this we need not create another expensive institution.

This brings us face to face with the question: "What is the object and true line of work of the Army War College?" The first definite idea in respect to this institution is found in the report of the Secretary of War for the year 1899. In discussing the subject of possible improvements in army organization that report laid down two propositions as being fundamental in the consideration of the subject, the first of which was "that the real object of having an army is to provide for war." The Secretary admitted that this statement "seemed like a truism," and adds that "it will probably be received everywhere without conscious denial." But he goes on to show that "the precise contrary is really the theory upon which the entire treatment of our Army proceeded for thirty-three years between the civil war

and the war with Spain;" that "present utility was really the controlling consideration, and the possibility of war seemed at all times so vague and unreal that it had no formative power in shaping legislation regarding the Army."

He then pointed out several important things which are necessarily involved in this fundamental truism and which are necessary for the proper preparation of an army for war. The first of these was the "systematic study by responsible officers of plans for action under all contingencies of possible conflict, and with this, study of the larger problems of military science and the most complete information of the state of the art, study of the constant improvements in movements and methods of warfare, and of the adaptability of improvements and inventions for the purpose of carrying out the plans devised, etc." He showed that this work could not be done "by the separate study and reflection of single officers," but that it required "the contribution of different minds, the correction of discussion, the long-continued, laborious, and systematic application of a considerable number of minds of a high order, and with a recognized status giving authority to their conclusions," all of which he stated to be "needed to produce the desired result."

To accomplish this he was led to the conclusion that an Army War College should be established. He suggested that it should be composed of the heads of the staff departments of the War Department, together with a number of other officers of high rank of the Army, who should be detailed for limited periods, and that—

it should be the duty of this body of officers to direct the instruction and intellectual exercise of the Army, to acquire the information, devise the plans, and study the subjects above indicated, and to advise the Commander in Chief upon all questions of plans, armament, transportation, mobilization, and military preparation and movement.

It was his idea at that time that the division of military information should be combined with the college, and that the college should not supersede the service schools, which even then, as he stated, "so far as instruction is concerned, largely cover the ground." So far as regards the character of the instruction to be given at this institution his idea is contained in the following words:

Its instruction would at the outset and perhaps permanently be given through these service schools, but it should give unity, influence, authority, and effectiveness in military affairs to the work and the thought developed in them aside from mere instruction, etc.

In this résumé of the first and what is still the truest and soundest idea of what such an institution should be and do, the first thing that strikes us is the use of the word "college" in its old Latin sense of collegium—that is to say, a body of men associated together by a community of interest and object for doing something rather than to learn how to do it, or, at the most, the "learning how" is a mere incident to the "doing."

The second thing which strikes us in the résumé is the assigning to the proposed war college so many of the functions of a general staff. This is due partly to the fact that at the time these words were written our General Staff was a mere hope of the future which might never be realized, in which case an Army War College might be made, in part, to take the place of such a body of men; and, second, to the fact that an Army War College, properly developed and doing things which it should do, is more than any other institution both the creation and the creature of the General Staff.

**REPORT OF BRIG. GEN. TASKER H. BLISS, U. S. ARMY, PRESIDENT
OF THE ARMY WAR COLLEGE.**

ARMY WAR COLLEGE,
Washington, November 11, 1903.

SIR: I have the honor to submit the following report:

The first official reference to the Army War College as an established institution, or one in the process of establishment, is contained in the act making appropriation for the support of the Army approved May 26, 1900, which act provided as follows:

For hire of clerks, purchase of stationery, furniture, and for contingent expenses incident to the establishment of the Army War College, having for its object the direction and coordination of the instruction in the various service schools, extension of the opportunities for investigation and study in the Army and Militia of the United States, and the collection and dissemination of military information, twenty thousand dollars.

As, amid the pressure of other important work, it was impracticable for the War Department to take, in respect to the proposed college, more than the initial stage during this fiscal year, this appropriation was allowed to lapse. However, a board was appointed under date of February 19, 1900, for the purpose of considering regulations under which such an institution could work.

In the act of March 2, 1901, a further appropriation was made "for the continuance of the Army War College," the object of the institution being stated in the same terms as in the act of the preceding year.

In that same year, under date of November 27 (see G. O. 155, A. G. O., 1901), was issued the order of the War Department formally establishing the war college and providing for a detail of officers thereat, which detail, however, was contingent upon the availability of the necessary buildings and grounds on the reservation at Washington Barracks, D. C.

The phraseology of the paragraph relating to the war college in the act of June 30, 1902, differed from that in the preceding ones, in that it omitted any reference to "the collection and dissemination of military information" as being one of the objects of the college. That act also appropriated the sum of \$400,000—

from the unexpended balance of the emergency fund appropriated in the act approved March third, eighteen hundred and ninety-nine, for the erection of the necessary buildings for the Army War College, established at Washington Barracks, District of Columbia.

The act of March 2, 1903, makes an appropriation for the current fiscal year for the continuance of the college, but without reference to the object for which it is established.

The appropriations above referred to have been or are being expended for the procurement of material necessary for the work of this institution, and it is to be hoped that upon the completion of the building

provided for in the act of June 30, 1902, little, if anything, need be asked to complete its equipment.

The development of the war college along proper lines, so that it may accomplish the utmost possible in the practical training of officers and diffuse this benefit among the greatest number, requires that there should be no mistake in establishing the initial direction. In this matter we get very little assistance from a study of foreign systems of military education. No country in the world has, in theory at least, so fine a system of professional scholastic training for its officers as is the case in the United States, and if this theory should not be fully realized in practice our new system of military administration should be held to a severe accountability for it. A characteristic of the most highly developed of these foreign systems is the perfect training of every officer in the practical duties of his profession, a result easily obtained where service is always with large bodies of troops constantly on the war footing or approximating to it; the technical training of officers of special troops, and an advanced training of selected officers with special reference to fitting them for service in the general staff. The length and the general scope of the latter course of instruction is a tacit confession of the inadequacy, for the purposes of staff officers and officers of higher command, of the preliminary scholastic and professional training as compared with what, in theory, constitutes our system.

What is especially to be noticed is that these foreign systems of training are sound because they thoroughly fit the local theory of military organization. They are unsound when transplanted to a locality where this theory of military organization is quite different.

In an army where the officer corps is kept upon the war footing, where the additional troops called into service at the outbreak of war are not raw volunteers or conscripts, but consist of officers and men trained equally as well as those who are under arms before the first shot is fired—in such an army the main object is to train every man for the efficient performance of his duties in the grade which he holds when war comes. In such an army a lieutenant does not dream of becoming a captain merely as the result of war, except as a vacancy is made for him in the casualties of battle. Only in the same way does the captain expect to become a colonel, nor would the idea be tolerated that great numbers of trained line officers are to be suddenly transferred to various staff positions merely because when war comes the government has no choice between an efficient staff and an inefficient line, or vice versa.

Such an organization is founded upon the sound theory that there is nothing recondite in the art of war; that technical, scientific training is needed by only a small portion of military officers; that certain things which a Napoleon must know every officer must know and can as readily acquire as he, while those things which differentiate a Napoleon from other generals can not be acquired in any school, not even in that of war; else Napoleons would be as thick in history as apple blossoms in a New England spring. Such a system assumes not only that if the military machine is perfect, if every man is fitted for his place and when war comes is in that place, the machine will be ready for the nation's Napoleon if Heaven send one; but also that while such a general might accomplish greater things with it, a lesser genius can accomplish sufficient things.

And such is really the object of modern military organization and training—to create an army with which the genius that is rarely found

can do all things, as well as one which, by its very perfection as a machine, will supply the advantages of genius to mediocrity.

Passing from the perfected foreign systems to our own, the most striking feature in the latter is the absence of what constitutes the essential core of the former, i. e., a great standing army, serving in corps, divisions, and brigades, in which the average officer of any grade learns the details of his business by practical work and with the minimum of theory. But as our wars with foreign powers must be fought with large armies like theirs, our officers must be the leaven of these armies; they must be prepared to serve in various grades and even pass from one branch of the line to another. Line officers must be able to serve in staff corps and departments and as staff officers in the line. In this idea the life work of one of our ablest officers—the late General Upton—found its inspiration, and his assimilation of the drill regulations of the three arms was for the especial purpose of enabling trained officers to pass from one arm to another with least loss of efficiency.

In our system, as in all others, the first requisite is a corps of efficient regimental officers. For such an officer there must be presupposed zeal and ability for hard work, unremitting attention to the petty details of company and other regimental duty, tact in the management of men, courtesy, a spirit of justice, obedience, and subordination. Some of these things can be taught, but in no other school than that of experience; others, if not innate, can hardly be acquired, and we must do the best we can without them.

Upon this foundation the training of the regimental officer is built up with little necessary study of other than those books which must be the daily reference of every officer. He needs a thorough knowledge, both theoretical and practical, of the drill regulations (both close and extended order) and the outpost duties of his arm; with this he will know how to instruct his men in all the duties of a soldier and to handle them in the operations of peace and war. He needs a thorough knowledge of the army regulations; with this he will know his rights and obligations and those of other officers and of enlisted men; he will know how to feed, to clothe, to equip, to shelter, to pay and transport his men; and he will know a good deal of the law which governs him in his relations to the civil authorities. He needs a thorough knowledge of the elements of military law and of the procedure of courts-martial; with this he will know how to guard his own rights and those of the men dependent upon him and how to proceed intelligently and lawfully in the administration of justice.

All this and something more is now provided in our system of military education in the course outlined for the officers' post schools. For the officers of special troops, such as the cavalry and field and coast artillery, there is provided sufficient technical instruction to enable regimental officers of all grades to perform efficient service in field or garrison. No regimental officer, for the purpose of regimental duties, need be required to study more than this course provides. It is enough for a good second lieutenant. And it is enough, combined with certain qualities of mind presupposed at the outset, for a good colonel.

The system outlined in General Orders, No. 102, 1902, brings into the course of instruction, in one way or another, every regimental officer, and at the end of two years from its inception every such officer will have completed the course except those who have entered the service since that initial date. Thus, these schools should and must be made

to guarantee to the Secretary of War that regimental officers of each grade are, so far as study can accomplish it, qualified for promotion to the next higher one. The only thing lacking to make the system perfect is the opportunity to practically train junior officers with a complete regimental organization and the field officers with a complete brigade organization. This deficiency is gradually being supplied by the concentration of troops and opportunities to participate in the annual maneuvers of considerable bodies. But in any event the failure of a regimental officer to pass his examination for promotion should result in bringing the authorities of the post schools through which he has passed to a rigid account, since there would seem to be no other explanation for such failure than gross neglect on the part of the officer being trained (ample reason for severing him from the service before his examination for promotion) or on the part of those whose duty it is to train him.

The Secretary of War should not have to wait until an officer's formal examination to know that he is proficient. This examination should be only the pro forma stamp which the law requires upon the officer's commission to make it valid. But the War Department should know day by day whether the officer is proficient up to date, so that if he is not, the proper steps can be taken to "brace up" either the officer or his post school according as the one or the other is responsible for the deficiency. This can be done by a system of constant supervision and severe inspection under the direction of the General Staff.

But it will be a serious error if the work of the post schools stop with guaranteeing an officer's promotion. Nor do I understand that it is intended to stop there. It is to be assumed that in due time the officers for General Staff work performing duty outside of and of a higher character than that of the regiment will be selected from the special schools. It is to be assumed that the students for the special schools will for the most part be selected at large from the officers of the line of the Army. But to make this latter selection judiciously we must be able to discriminate between those who are content to thoroughly know their regimental duties and those who show a zeal and an aptitude to go further.

For the present this selection is properly being made from those who most distinguish themselves in the course now outlined for the post schools. But after these schools have accomplished their first object of fitting officers for regimental promotion there should be provided (and it is understood that it is so intended) another and more advanced course, failure in which need not prejudice promotion, but success in which would give us another class of eligibles for the special schools.

At the post schools we now have men from West Point, appointees from civil life with the education acquired in the highest grade of civil institutions, others with only a common school training, and others promoted from the ranks. All of these should be good material for regimental officers; some may be good for nothing else; the others are those from whom a General Staff must be recruited. For this no time should be wasted; each group of officers should be pushed to its limit, and from those whose limit extends the farthest the selection should be made. No one, whether from West Point or elsewhere, should be excused from any work on the assumption that he already knows. A good many of the things even now outlined in the post school course the West Pointer is not likely to know so well as the man promoted

from the ranks. As soon as anyone proves that he does know the course, provide him with another that he does not know.

Finally, these advanced courses will keep all officers at work during all the time of each year allotted to this instruction. There is, or at least in years past there has been, an unfortunate tendency on the part of officers, whether from West Point or elsewhere, to gradually lose the habit of study (except as connected with the simple routine of their work), and with it not only a failing to acquire the daily increasing knowledge necessary to keep them abreast of their profession, but actually to lose much of what they had already learned. In short, it was a process of steady decadence culminating in complete dry rot. Therefore, these schools, with a graded course of instruction, will do a great work in rearing the habit of study in those who may have lost or are losing it and in innoculating with it those who may have never had it. But they should do more than this. If a young man, without the daily application of the spur, is in danger, a year or two after entering the service, of losing studious habits and ambition to qualify himself beyond the sphere of his immediate duties, he will also be in the same danger, even if to a lesser degree, a year or two after completing the present course at the post schools. The only remedy is to surround the officer in his daily life, and throughout his life, with an atmosphere which he must breathe into his mental and moral being whether he will or no, and which shall be a never-relaxing stimulus to continued endeavor, and this can be accomplished by the successive graded courses of instruction heretofore recommended for the post schools. This is the great secret of German success in military training. There is never any "let-up." No officer is held to be qualified for promotion unless he proves it at the time of getting it. The fact that he was qualified yesterday is not accepted as evidence that he is qualified to-day.

Thus the post schools form the broad foundation on which is built up the system of military education outlined by the Secretary of War in Appendix A to his report for 1901. They permit the special-service schools to immediately reassume their proper function of special higher training, and to be no longer limited to the duty of preparing officers for promotion. They amply fulfill, or are intended to fulfill, the important function of providing a well-trained corps of regimental officers, a corps which is the very spinal cord of efficiency in any army. Moreover, under the terms of General Orders, No. 155, 1901, all officers of the organized militia may be authorized to pursue the course of study laid down for the post schools, when approved by the Secretary of War and without expense to the Government. Every encouragement should be given these officers to do this. These schools are more convenient, as a rule, to the places of residence of officers of the organized militia, and they afford all of the instruction that most of them need or desire. In this way these schools will perform the additional function of insuring the maximum number of trained regimental officers for our large improvised armies in time of war.

But, as has been pointed out, our system of military education differs from that in the great military nations of the world in that we can not be content merely with training a lieutenant to be a good lieutenant or a captain to be a good captain, or in training staff officers to the efficient performance of duties in peace which they will continue to perform in the same grade in time of war; but it is to train the officers who will form the leaven of a great army in time of war, so that they will be able, at a moment's notice, to perform the duties of far advanced grades and to render service in branches of the Army,

both line and staff, in which they are not commissioned in time of peace. For this reason we have established upon the base of the post schools a system of special schools, which provide for the advanced education of officers of the cavalry and field artillery, of the coast artillery, including the art of submarine warfare, of the engineer troops, and of the medical corps. An examination of their curricula shows that already the latter can be modified by eliminating those subjects that can properly be taught in the post schools and without proficiency in which no officer should be permitted to enter a special school. Thus the training in the special schools can, if desired, be carried even further without extending the time for the course.

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Leaving out of consideration for the moment the Military Academy, the training at which is antecedent to a commission, and the War College, the foregoing is an outline of our system of military education. It seems evident that it exhausts the useful possibilities of scholastic professional training. It is impossible to devise a curriculum which shall not involve a repetition of what is taught in one or another or in all of the above schools. We may, it is true, have more mathematics, more problems in engineering, more illustrations of the principles of grand tactics and strategy, but for this we need not create another expensive institution.

This brings us face to face with the question: "What is the object and true line of work of the Army War College?" The first definite idea in respect to this institution is found in the report of the Secretary of War for the year 1899. In discussing the subject of possible improvements in army organization that report laid down two propositions as being fundamental in the consideration of the subject, the first of which was "that the real object of having an army is to provide for war." The Secretary admitted that this statement "seemed like a truism," and adds that "it will probably be received everywhere without conscious denial." But he goes on to show that "the precise contrary is really the theory upon which the entire treatment of our Army proceeded for thirty-three years between the civil war

and the war with Spain;" that "present utility was really the controlling consideration, and the possibility of war seemed at all times so vague and unreal that it had no formative power in shaping legislation regarding the Army."

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it should be the duty of this body of officers to direct the instruction and intellectual exercise of the Army, to acquire the information, devise the plans, and study the subjects above indicated, and to advise the Commander in Chief upon all questions of plans, armament, transportation, mobilization, and military preparation and movement.

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In this résumé of the first and what is still the truest and soundest idea of what such an institution should be and do, the first thing that strikes us is the use of the word "college" in its old Latin sense of collegium—that is to say, a body of men associated together by a community of interest and object for doing something rather than to learn how to do it, or, at the most, the "learning how" is a mere incident to the "doing."

The second thing which strikes us in the résumé is the assigning to the proposed war college so many of the functions of a general staff. This is due partly to the fact that at the time these words were written our General Staff was a mere hope of the future which might never be realized, in which case an Army War College might be made, in part, to take the place of such a body of men; and, second, to the fact that an Army War College, properly developed and doing things which it should do, is more than any other institution both the creation and the creature of the General Staff.

As a matter of fact, the advance study of officers—that is to say, the investigations which they may pursue after exhausting the possibilities of the service schools—can only be taken up under the immediate direction of a general staff, if such exists. This advanced line of investigation is in reality general staff work. If the staff does not exist, the war college where such work is done replaces the staff to that extent; if the staff does exist, it must direct the war college in such way that there shall be no “lost motion,” and that neither duplicates the work of the other.

Bearing in mind the idea outlined by the Secretary of War, let us see how it corresponds with the results of nearly twenty years' experience, as shown in that admirable institution to which many officers attribute no small share of the strategical and tactical success of our Navy during the war with Spain. We have seen that the necessary consequence of the idea of the Secretary of War is that the Army War College must perform work for the General Staff, and, whether extralegally or not, be a part of its system. To what, in this direction, has the experience of the Navy led? Rear-Admiral F. E. Chadwick, lately the accomplished president of the Naval War College, in an address delivered a year ago, said:

The establishment of the War College was the second of the steps in an unaccustomed direction which has worked a change, and will work a greater one as part of the General Staff system, which it forms with the general board and Office of Naval Intelligence.

After then pointing out the many serious and complicated problems which a naval general staff must study and solve, he concludes:

It is thus our business to look forward, to consider what is likely to happen, to judge what is necessary from a naval standpoint to meet these happenings, and finally how to meet them. All this is done and can only be done through a general staff, of which this college is so important a part.

If the foregoing in any way indicates the true lines of development for the Army War College, the practical steps to be taken are indicated by the questions: (1) What shall be taught? (2) How shall it be taught? (3) How shall the teaching be extended to the greatest number?

1. We should eliminate “the collection of military information.” For this purpose a special and ably directed bureau has been created and is now part of the General Staff. We should eliminate any special study of the preparation of material of war. This is doubtless an important study, but its proper place is elsewhere. The schools already exist where officers should be and are taught how to draw from the lessons of experience instruction as to improvements in arms, ammunition, clothing, food, means of transportation, and other material of war. The investigations of the War College should relate to the best application of the material which actually exists to conditions which may arise to-morrow. We should omit the formal study of the theory of the subjects that are or can be sufficiently taught in the service schools, such as history, arms, construction of fortifications, mapping and sketching, military hygiene, military law, physics, geology, mathematics, surveying, and chemistry. These constitute by far the larger part of the course in a foreign war college. They require two or three years for completion, and for this reason alone, if for no other, such a course would be impracticable with us on account of the small number of officers who could follow it. Nor is their study necessary with us since we are able to furnish an abundance of officers amply qualified in them.

There will be left, therefore, for the war college the broad field outlined by the Secretary of War in 1899, of the "study of the larger problems of military science," to "devise the plans" relating to the question of military preparation and movement in time of war. Ultimate responsibility for this is imposed upon the general staff, but with us, as with the Navy, the war college should be one of its most important agencies for meeting this responsibility.

2. The college should, under the direction of the chief of staff, take up the detailed study of the military problems confronting the United States. It should work out the multitudinous details which are necessary to enable the chief of staff and his subordinates to determine which of several projects will be best in the event of a certain contingency. This study should be so complete that in case the contingency for which it is made arises the chief of staff should be able to formulate the daily orders governing the minutest movements during at least the early days of the operation. By its relations with the Naval War College the Army War College should tend to produce harmony of action between the two services in all cases requiring cooperation. After such criticism and revision as it may from time to time make or direct the general staff will be able to file with its records a gradually increasing number of projects for the guidance of the War Department when the contingencies for which they are severally made become realized.

3. At stated intervals a number of officers, selected from those who are known in advance as being among the ones who will play an important part in carrying these plans into execution, should be assembled for their minute and detailed study. This study should in its general character be the working out of a great war game. At this time lectures may be delivered by the most competent officers upon each of the important problems which arise in the course of the study. These lectures will not be general, but in the nature of special memoranda relating to the problems in hand. Military road making, military bridge building, and all kinds of work of construction and demolition will be considered with special reference to the work to be constructed or destroyed in the conduct of this practical operation. In the same way will be investigated any special problems of transportation by land or water, special difficulties of embarkation and disembarkation, questions of food supply, of equipments of all kinds, of the organization of trains, etc.—all with reference to the concrete problem under consideration. If the project involves the siege and defense of a fortified place, the siege problem will be studied with reference to that particular place. The project will necessarily indicate where a combat or battle may be expected, and the questions of strategy antecedent to it, and of grand and minor tactics, will be studied with reference to these particular localities. Finally, the project may involve many and grave questions of international law which should be solved for the benefit of the officers interested by well-recognized authorities, who would view them as questions which have actually arisen and upon which their official opinion has been asked. It is not necessary to say that the nature of this work requires that it shall be confidential.

Upon the foregoing lines, approved by the Secretary of War and the Chief of Staff, the war college has already begun work. Until the completion of the new building, which will provide conveniences for the work of a considerable number of officers, it is believed that the

following regulations are all that is necessary for the government of the Army War College.

I. The Army War College shall be located in the city of Washington, D. C.

II. The college shall be under the direct control of the Chief of Staff.

III. Under the direction of the Chief of Staff the management of the college shall be vested in a president and two directors, who shall be assisted by a secretary.

IV. The special duty of the college shall be to assist the Chief of Staff and the General Staff in the preparation of plans for the national defense. For this purpose such number of suitable officers as may from time to time be found to be necessary by the Chief of Staff shall be detailed from the General Staff or from officers of the line, or other staff corps and departments of the Army, and these officers shall work with and under the direction of the personnel provided in paragraph III.

V. The war college will receive from time to time instructions from the Chief of Staff as to the problems which it shall take up and the general line of investigation which it shall pursue.

After the most complete study practicable a report will be rendered to the Chief of Staff setting forth the recommendations of the college. This report will be reviewed and criticised by the Chief of Staff and such section of the General Staff as may be directed to do so by him, and if necessary will be returned to the college with these criticisms for further study and revision.

Whenever the nature of the problem is such as to require harmony of action between the two services, the report will be submitted to the joint board of army and navy officers appointed by General Order No. 107, Adjutant General's Office, 1903, and the conclusions will be further studied in the light of criticisms made by said board.

Upon the final acceptance of the report of the college by the Chief of Staff, the report will be filed in his office.

VI. From time to time, as may be determined by the Chief of Staff, a selected number of officers, to be taken from the Army at large, will be assembled at the war college for the minute and detailed study, under the direction of the Chief of Staff, of the projects thus formulated.

VII. The work of the college in the preparation of its reports and in the subsequent instruction based thereon shall be confidential.

Very respectfully,

TASKER H. BLISS,

Brigadier-General U. S. Army, President Army War College.

The CHIEF OF STAFF.

**REPORT OF THE COMMANDANT OF THE GENERAL
SERVICE AND STAFF COLLEGE.**

1801

**REPORT OF COL. C. W. MINER, SIXTH U. S. INFANTRY, COMMAND-
ANT GENERAL SERVICE AND STAFF COLLEGE.**

GENERAL SERVICE AND STAFF COLLEGE,
Fort Leavenworth, Kans., July 25, 1903.

The ADJUTANT-GENERAL, U. S. ARMY,
Washington, D. C.

SIR: I have the honor to submit the following report of the operations of the General Service and Staff College for the school year commencing September 1, 1902, and ending with the graduation of the class of 1903 on the 23d instant:

The student class was originally composed of 96 members, as follows:

First Lieut. Percy W. Arnold, First Cavalry; First Lieut. James S. Butler, First Cavalry; Second Lieut. C. Rodman Jones, First Cavalry; First Lieut. Edgar N. Coffey, Second Cavalry; First Lieut. Consuelo A. Seoane, Third Cavalry; First Lieut. William R. Taylor, Third Cavalry; First Lieut. Robert R. Wallach, Third Cavalry; First Lieut. William A. Austin, Fourth Cavalry; Second Lieut. John A. Degen, Fourth Cavalry; Second Lieut. Granville R. Fortescue, Fourth Cavalry; First Lieut. Charles S. Haight, Fourth Cavalry; First Lieut. Thomas M. Knox, Fourth Cavalry; First Lieut. Ward B. Pershing, Fourth Cavalry; First Lieut. Joseph C. Richter, jr., Fourth Cavalry; First Lieut. Jens E. Stedje, Fourth Cavalry; First Lieut. John P. Hasson, Fifth Cavalry; First Lieut. Frank T. McNarney, Sixth Cavalry; First Lieut. Ewing E. Booth, Seventh Cavalry; First Lieut. Solomon L. Jeffers, Seventh Cavalry; Second Lieut. Albert E. Phillips, Eighth Cavalry; Second Lieut. Henry S. Terrell, Eighth Cavalry; First Lieut. Rush S. Wells, Eighth Cavalry; First Lieut. George Williams, Eighth Cavalry; First Lieut. John E. Hemphill, Tenth Cavalry; First Lieut. Basil N. Rittenhouse, Eleventh Cavalry; Second Lieut. James E. Abbott, Twelfth Cavalry; First Lieut. Herbert J. Brees, Twelfth Cavalry; Second Lieut. Arthur N. Pickel, Twelfth Cavalry; Second Lieut. Douglas H. Jacobs, Fourteenth Cavalry; First Lieut. Rudolph E. Smyser, Fourteenth Cavalry; First Lieut. Gordon Johnston, Fifteenth Cavalry; First Lieut. Leonard T. Baker, First Infantry; First Lieut. William B. Folwell, First Infantry; First Lieut. E. Alexis Jeunet, First Infantry; First Lieut. DeWitt W. Chamberlin, Second Infantry; First Lieut. Franklin S. Leisenring, Fourth Infantry; Second Lieut. John C. Murphy, Fourth Infantry; Second Lieut. Auswell E. Deitsch, Fifth Infantry; First Lieut. George R. D. MacGregor, Fifth Infantry; Second Lieut. Charles R. W. Morrison, Fifth Infantry; First Lieut. Albert S. Williams, Fifth Infantry; First Lieut. George N. Bonford, Sixth Infantry; First Lieut. John F. Wilkinson, Sixth Infantry; Second Lieut. Joseph C. Wilson, Sixth Infantry; First Lieut. David A. Snyder, Sixth Infantry; First Lieut. Percy M. Cochran, Seventh Infantry; First Lieut. Fred L. Davidson, Seventh Infantry; First Lieut. Frederick W. Mills, jr., Seventh Infantry; First Lieut. William A. Cavanaugh, Eighth Infantry; First Lieut. Henry M. Fales, Eighth Infantry; First Lieut. Walter H. Johnson, Eighth Infantry; First Lieut. Alvin C. Voris, Eighth Infantry; First Lieut. Benjamin P. Nicklin, Ninth Infantry; First Lieut. Kaolin L. Whitson, Ninth Infantry; First Lieut. Donald C. McClelland, Tenth Infantry; Capt. John B. Schoeffel, Tenth Infantry; Second Lieut. George R. Crawford, Eleventh Infantry; First Lieut. John T. Dunn, Eleventh Infantry; First Lieut. Rowland S. Pike, Eleventh Infantry; Second Lieut. Morris M. Keck, Twelfth Infantry; First Lieut. Frank D. Wickham, Twelfth Infantry; First Lieut. Charles F. Andrews, Thirteenth Infantry; First Lieut. Frank R. Curtis, Thirteenth Infantry; First Lieut. John M. Kelso, jr., Thirteenth Infantry; First Lieut. Allan L. Briggs, Fourteenth Infantry; First Lieut. Arthur M. Ferguson, Fourteenth Infantry; First Lieut. Bryan Conrad, Fifteenth Infantry; First Lieut. Thomas R. Harker, Fifteenth Infantry; Second Lieut. Harry D. Mitchell, Sixteenth Infantry; First Lieut. Charles H. Danforth, Seventeenth Infantry; First Lieut. Charles S.

Frank, Seventeenth Infantry; First Lieut. Solomon B. West, Eighteenth Infantry; First Lieut. William M. Goodale, Nineteenth Infantry; Second Lieut. John F. McCarthy, Nineteenth Infantry; First Lieut. William B. Graham, Twentieth Infantry; First Lieut. De Witt C. Lyles, Twentieth Infantry; First Lieut. James M. Petty, Twentieth Infantry; First Lieut. George M. Grimes, Twentieth Infantry; First Lieut. William C. Fitzpatrick, Twenty-first Infantry; Second Lieut. William A. Haycraft, Twenty-second Infantry; First Lieut. Fred Bury, Twenty-third Infantry; First Lieut. Robert E. Grinstead, Twenty-third Infantry; First Lieut. Thomas B. Crockett, Twenty-fourth Infantry; First Lieut. Fred W. Bugbee, Twenty-fifth Infantry; First Lieut. John W. French, Twenty-fifth Infantry; Capt. Patrick A. Connolly, Twenty-sixth Infantry; Capt. Walter T. Bates, Twenty-seventh Infantry; First Lieut. George E. Kumpe, Twenty-eighth Infantry; Capt. Englebert G. Ovenshine, Twenty-eighth Infantry; First Lieut. William M. True, Twenty-eighth Infantry; First Lieut. Gideon H. Williams, Twenty-eighth Infantry; Second Lieut. Joseph B. Caughey, Twenty-ninth Infantry; Second Lieut. Franklin P. Jackson, Twenty-ninth Infantry; First Lieut. Eugene P. Crowne, Twenty-ninth Infantry; First Lieut. Milo C. Corey, Thirtieth Infantry; First Lieut. Cromwell Stacey, Thirtieth Infantry.

Of the foregoing class 75 members successfully passed the examinations and were graduated.

The following 13 members continued the course to the end, but failed in two or more subjects and were not graduated:

First Lieut. Edgar N. Coffey, Second Cavalry; Second Lieut. Douglas H. Jacobs, Fourteenth Cavalry; First Lieut. Leonard T. Baker, First Infantry; Second Lieut. Auswell E. Deitsch, Fifth Infantry; Second Lieut. Charles R. W. Morrison, Fifth Infantry; First Lieut. Frederick W. Mills, jr., Seventh Infantry; Second Lieut. Morris M. Keck, Twelfth Infantry; First Lieut. John M. Kelso, jr., Thirteenth Infantry; First Lieut. Bryan Conrad, Fifteenth Infantry; Second Lieut. William A. Haycraft, Twenty-second Infantry; First Lieut. Thomas B. Crockett, Twenty-fourth Infantry; First Lieut. William M. True, Twenty-eighth Infantry; Second Lieut. Franklin P. Jackson, Twenty-ninth Infantry.

The following members were dropped from the class roll for various reasons, as follows:

Second Lieut. C. Rodman Jones, First Cavalry, discharged the service because of failure to pass second examination for promotion.

First Lieut. George R. D. MacGregor, Fifth Infantry, resigned.

Second Lieut. George R. Crawford, Eleventh Infantry, discharged the service because of failure to pass second examination for promotion.

First Lieut. John T. Dunn, Eleventh Infantry, undergoing treatment at hospital, Hot Springs, Ark.

First Lieut. Charles S. Frank, Seventeenth Infantry, undergoing treatment at hospital, Washington, D. C.

Second Lieut. John F. McCarthy, Nineteenth Infantry, dismissed the service by sentence general court-martial.

First Lieut. De Witt C. Lyles, Twentieth Infantry, undergoing treatment at hospital, Washington, D. C.

Second Lieut. Joseph B. Caughey, Twenty-ninth Infantry, discharged the service because of failure to pass second examination for promotion.

In making this report, I can not speak too highly of the cordial relations that have existed at all times between the members of the college staff and of the hearty support given me during the past year in our combined efforts to make the college a success. A word of commendation is also due to the assistant instructors who have conducted the section-room work. They have worked indefatigably at all times, without regard to days or hours, and when it is taken into consideration that more ground has been covered during the year than ever before in any one year during the history of the institution; when it is remembered that the instructors and students alike were new to the work; that very many of the latter had barely a common school education, and that many students were from six weeks to three months late in reporting, it must be conceded that the work accom-

plished by the class and by those charged with the instruction is little short of remarkable.

During the year's work it was found necessary to court-martial three of the student officers for "neglect of duty" in connection with their college work, as they had become decidedly indifferent and negligent in attendance and recitations. The effect was salutary and resulted in obtaining good work from the officers tried for the remainder of the course, as well as a decided improvement in the work of several others who were rather indifferent during the first half of the course.

The following is a synopsis of the work in the different departments, the details of which will be found in the reports of the heads thereof, hereto appended.

DEPARTMENT OF TACTICS.

This department was under the charge of Capt. Joseph T. Dickman, Eighth Cavalry, and the course as carried out has been eminently satisfactory to all concerned.

I can not too highly commend the zeal and ability of Captain Dickman in filling what I consider one of the most difficult positions in the Army. The head of the tactical department of this college must needs be a man of energy, ability, and stamina, possessing a wide range of both book and practical knowledge, a man of research in military history, and, above all, should possess the keen judgment to draw correct conclusions from the military experience of all countries. Captain Dickman has shown that he possesses all these, and it is to be regretted that duty takes him to other fields of work (the general staff).

The following were the assistant instructors in this department: Capt. Louis C. Scherer, Fourth Cavalry; Capt. William H. Simons, Sixth Infantry; Capt. Lyman M. Welch, Sixth Infantry; Capt. Robert J. Maxey, Twenty-fourth Infantry.

DEPARTMENT OF ENGINEERING.

This department has been in charge of Capt. Thomas H. Rees, Corps of Engineers, and has been conducted to my entire satisfaction.

Captain Rees has eliminated photography from the course and has added other more practical work, until now the course in engineering is considered by those competent to judge to be about all that could be desired considering the time allotted. When the course is again extended to two years, Captain Rees will, if retained, place the department in a high degree of efficiency. He is preeminently the man for the place, and I strongly recommend that he be retained at the head of the department as long as he may be willing to serve.

The following were the assistant instructors during the year: Capt. Edwin T. Cole, Sixth Infantry; First Lieut. George M. Hoffman, Corps of Engineers; First Lieut. Gilbert A. Youngberg, Corps of Engineers; Second Lieut. Wildurr Willing, Corps of Engineers.

Without detracting in the least from the abilities or work of any one of the above, it is but just to say that Capt. Edwin T. Cole, Sixth Infantry, has rendered most efficient service in the department and is particularly well fitted for the work. He should be retained as senior assistant to Captain Rees, as he is thoroughly competent, both as to rank and ability, to take charge of the department in case the chief is called away or relieved.

DEPARTMENT OF LAW.

The department of law has been under the charge of Maj. Henry M. Andrews, Artillery Corps, for the entire year, and the work has been thorough and satisfactory. The course has covered military law, international law and regulations; the time allotted was all that could be spared during the one-year's course, but is not sufficient. It is noted with satisfaction that administration is eliminated from the course the coming year, which fact will add considerable time to law proper. No course at the college offers so much room for development as the law course as heretofore taught, principally along the lines of "martial law," and the "law of war." It is hoped that the future will see an exhaustive course in the "law of war" instituted, covering the subjects of "G. O. 100 of 1863," "G. O. 52 of 1902," "military commissions," "provost courts," and "concentrations."

The following were the assistant instructors in the law department: Capt. Omar Bundy, Sixth Infantry; Capt. Tyree R. Rivers, Fourth Cavalry; Capt. Dwight W. Ryther, Sixth Infantry; First Lieut. Arthur P. S. Hyde, Artillery Corps.

DEPARTMENT OF MILITARY HYGIENE.

This department has been under the charge of Lieut. Col. John Van R. Hoff, deputy surgeon-general, post surgeon. Although the time allotted to this department has been insufficient and the course much too limited, the instruction given by Colonel Hoff has been very satisfactory indeed. The student officers many times have expressed their interest in the lectures given and in the knowledge gained therefrom.

This course, like the law course, is a subject for much development in the way of an extensive series of lectures. The surgeon who has charge of the department should have no other duties to perform, as it will tax a sturdy man's efforts to the utmost to do full justice to the course.

As is well stated in Colonel Hoff's report, hereunto appended, his college work has been but "an episode of his office as post surgeon of the largest post in the Army, the duties pertaining to which fully occupy his time and demand his entire attention."

I take this place to express my appreciation of the cordial assistance given me at all times by the assistant commandant of the college, Maj. Smith S. Leach, U. S. Engineers. He brought to the work a mind well stored with useful information, a keen knowledge of the wants of the institution, and excellent judgment in routine work, and I have found his suggestions and advice of inestimable value during a somewhat trying year. It is but fair to state that every officer on duty at the college, with the exception of Captain Dickman, did his college work in addition to his post duties, except where hours clashed, in which case college duties took precedence. I strongly recommend that post officers on duty at the college be relieved from all garrison duty, and that, so far as possible, the instructors and assistant instructors be taken from other commands, abilities being equal.

REMARKS AND RECOMMENDATIONS.

Of those who failed to graduate it is but proper and just to say that the majority of them did honest and faithful work throughout the year, and so far as personal effort is concerned deserved their diplomas.

But owing to lack of early education, to advancement in years beyond the age at which a man most easily assimilates technical knowledge, to lateness in reporting at the school, and consequent inability to make up for lost time (and in one case the latter reason, coupled with bereavements at home, the young officer having lost his father, mother, and brother), and, in general, to the system of marking, those who failed where unable to pass successfully all of the required examinations.

It is believed by the majority of the instructors and assistant instructors, as well as others connected with the college who have given the subject much thought, that under a different system of marking some deserving and efficient officers who failed would have been graduated; under a system that compels a man to stand or fall on his examinations alone these men simply could not "cram" sufficiently to pass, though their work in the recitation rooms throughout the year had been markedly better than many who graduated. There were several officers in the class who attracted attention in this respect. Two of them worked hard and faithfully from start to finish. They worked Saturdays, Sundays, holidays, evenings, and all the time. Their daily recitations were up to the average, and they apparently had a good knowledge of all subjects. Whatever they had to do they did well and stood well in the estimation of their instructors. But when it came to memorizing all of the book for examination they simply could not do it, and failed to get their diplomas.

In another case the man's daily recitation work was poor. His recitations were seldom, if ever, satisfactory to the instructor, though hardly poor enough to be called "unsatisfactory" in a technical sense and to be reported. In brief, his daily work for the year was indifferent, yet when it came to examination he was able by "cramming" night and day, on general review and during the examination period, to pass successfully all of his examinations, and got his diploma.

For the above reasons, as well as because it is believed to be a fairer method, it is recommended that the system of marking be changed to one in which daily work shall count two-thirds and final examination one-third on graduation standing, and it is further recommended that if at the close of a school period any man has passed over 90 per cent in daily work he shall not be required to pass examination. It is believed that the above system will be conducive to excellence in daily work on the part of the students and will be a more just one for all concerned.

It is recommended that the course of instruction at the college be extended to a two-year course, commencing with the school year, September 1, 1904, and that instead of ordering 100 men here every two years and keeping all of them in one class, the number of men ordered to report here September 1, 1904, and each year thereafter, be reduced to 50 or thereabouts, so that the total number of officers under instruction at the college at any one time after September 1, 1905, shall be divided into two classes, one of which shall graduate each year. The reasons for this recommendation are as follows:

1. The fewer men in a class the more attention can be given to each man individually.

2. The second class, namely, the one in its second year at the school, can give much assistance to the first class (the one in the first year's course) by answering numerous questions on the course and by giving them many bits of information and advice which the experienced can always give the inexperienced, and can thus save instructors and assistant instructors many needless questions. The two smaller

classes, one graduating each year, would need no more instructors than the one large class graduating every two years.

3. The best men in the second class would have sufficient experience and could be utilized as umpires in the patrolling and reconnoissance problems and various maneuvers of the first class.

4. A class of 100 men is unwieldy and hard to handle, owing to lack of room in the college building; the lecture room and drafting room are too small to accommodate so many men at once.

5. Last, but not least, the work and turmoil of properly providing for 100 incoming and outgoing officers and their families at the beginning and at the close of each school year would be reduced by one-half.

It is recommended that upon graduation of a class all proficient officers be ordered to report to such commanding general of army field maneuvers or army and navy maneuvers for that year as the Secretary of War may direct, reporting at such time as the designated maneuvers shall commence, and at the close of which they shall proceed to join their various regiments, unless granted regular leaves to take effect at the close of the maneuvers. This will be, it is believed, a most instructive and fitting termination to the course of study here and will give young officers a chance to see and work with large bodies of troops in the field, and thus obtain a practical knowledge of what they have been studying theoretically, besides furnishing a set of practically educated umpires for the maneuvers. The delay between date of graduation and date of reporting at the commencement of the maneuvers will be practically all the leave the most of the class will want, and will serve as a well-earned rest after two years' hard and confining work.

It is recommended that this post be furnished with 50 horses as mounts exclusively for student officers and that an enlisted detachment of 50 men, to be commanded by the instructor in equitation and hippology, be detailed to care for these horses. Serious difficulty has always existed in furnishing mounts to the student class for field work, and this difficulty is now largely increased owing to the increased number of officers ordered here for instruction. The present system of allowing a student to call upon a troop commander for a horse and an orderly at will always has been a nuisance, is productive of much ill feeling among the men, dissatisfaction among troop commanders, and is unsatisfactory to the students.

It is recommended that the post of Fort Leavenworth be made independent of the Department of the Missouri and set apart as a separate independent department under the command of the commandant of the General Service and Staff College. The reasons why the college should be independent of the department commander are self-evident and need no comment; and the post of Fort Leavenworth should also be independent of the department commander, because the work required of the troops by both the college and the department is more than should be required of them, and is the cause of much dissatisfaction among both officers and enlisted men. It is a constant complaint of company, troop, and battery commanders that their men will not reenlist for duty at this garrison owing to the excessive amount of work required of them.

Very respectfully,

CHARLES W. MINER,
Colonel Sixth Infantry, Commandant.

APPENDIX A.

REPORT OF THE SECRETARY.

GENERAL SERVICE AND STAFF COLLEGE,
Fort Leavenworth, Kans., July 25, 1903.

COMMANDANT, GENERAL SERVICE AND STAFF COLLEGE.

SIR: I have the honor to submit the following report pertaining to my office and duties as secretary of this college:

I assumed charge of the office June 1, 1903, relieving Capt. Lewis M. Koehler, Fourth Cavalry, pursuant to Special Order 101, Adjutant-General's Office, current series.

The amount of money allotted to the school for the fiscal year 1903 was \$11,512, and became available December 10, 1902. It has been expended as follows:

Department of engineering:	
Instruments and supplies	\$5,982.88
Office of the secretary:	
Furniture	\$1,987.10
Books for library	1,880.36
Extra-duty pay of enlisted men	525.60
Printing-office supplies	328.29
Typewriters	208.85
Photographic instruments and material	199.30
Newspapers and periodicals	175.95
Mimeograph supplies	57.85
Rent of telephones	24.00
Incidentals	141.82
	<hr/>
	5,529.12
	<hr/>
	11,512.00

These expenditures have been made in compliance with orders and regulations.

During the current school year 835 volumes have been purchased and added to the library. Besides these 45 volumes of reports and Government books have been received from the several Executive Departments at Washington, 31 volumes (American and English Encyclopedia of Law) donated by the Judge-Advocate-General's Department, and about 1,000 volumes have just been received as a gift from Brig. Gen. Samuel B. Holabird, U. S. Army, retired. I am sorry to state that 17 boxes of the latter, nearly all of them, were caught in the Kansas City flood and are badly damaged. In fact, most of them are completely ruined. I shall select such as are worth rebinding, and, after having them cleaned and rebound, place them in the Holabird alcove.

The library is also indebted to Gen. A. W. Greely, Chief Signal Officer U. S. Army, for numerous works received during the year, and to the Director of the Geological Survey and Superintendent of the Coast and Geodetic Survey for numerous books, maps, and charts of value furnished free of charge. The librarian, Mr. Cornelius Collins, is now at work, under my charge, cataloguing the library in the most modern and improved manner, and the printers are also at work setting up the forms for this catalogue. When completed it will make a volume of about 600 pages, which I hope to have ready for issue by the 1st of November. This will be a catalogue of size, appearance, and reference value which will be in keeping with the size and value of the college library, which when properly arranged in the new fire-proof building, for which plans are now under consideration, will be a credit to the college and to the service.

The school is already supplied with an excellent photographic outfit, and only such small amounts have been expended on it as were found necessary to place the various cameras and instruments in good working order and prevent further injury from disuse, and to purchase such small quantities of chemicals and materials as were necessary for school work.

It is recommended that the museum, which now consists of a few old implements of war and curios, be placed in a suitable room in the new library building, and that efforts be made to obtain a collection of modern articles and implements of war, constantly kept up to date, to serve as object lessons for student officers in studying their profession. Samples of small arms of latest models, together with infantry and cavalry equipments of all modern nations, should constantly be kept

on hand for the enlightenment of students. It is thought that this can be done through our military attachés and consuls abroad with but comparatively small expense to the college fund.

During the past year the method of keeping the records of the school has been changed from the old, antiquated book system to the modern card system, which it is my intention to amplify and improve in certain directions as observations may teach and necessity demand.

The college is fairly well supplied with furniture of suitable make and style, but a good many additions in the way of desks, tables, filing cases, paper files for the library, library tables, and library chairs are still needed to properly equip Sherman Hall and the library. The college is growing, both in size and national importance, and it is deemed proper and necessary to place and keep the various offices and section rooms in a state of creditable appearance and to have them all properly supplied with office furniture, pictures, etc., so as to be presentable and attractive when inspected by military attachés, foreign officers, and other visitors from at home and abroad. The offices of the commandant and secretary and of the heads of all departments have been recently decorated and placed in good condition. It is my intention, as soon as the new allotment becomes available, to purchase, on approval of the commandant, such articles of furniture and rugs as these offices may need, and also to place the various section rooms and the chief clerk's office in a more presentable condition.

It has been the custom for years to supply officers of the Army and of the National Guard with military text-books through this office. This necessitates a large amount of additional labor in the secretary's office, but it is believed it is appreciated by those who benefit thereby, and that this method of supplying books is of value to the service as well as a great convenience to the officers supplied. This custom has been continued during the past year, and, with the approval of the proper authorities, will be continued in the future.

There are 4 civil-service men, viz, 3 clerks and 1 librarian, and 6 enlisted men, employed in connection with the college.

The three civil-service clerks, Mr. J. W. Healey, Mr. W. B. Lydenberg, and Mr. E. N. Fesler, are all able and competent men and excellent clerks. They have worked indefatigably and without regard to hours, and are deserving of consideration. To Mr. Healey, chief clerk, especially I am under great obligations for his untiring efforts to keep the college records and accounts in excellent shape. He is an old soldier, ex-volunteer officer, and War Department clerk, and thoroughly understands his work. I strongly recommend that another stenographer and typewriter be obtained for duty in the secretary's office, as it is manifest that the present force can not do the work of the coming year. If a civil-service man can not be obtained enlisted men will have to be detailed for the work. Enough work is brought into the secretary's office from the department of tactics alone to keep one competent man busy throughout the school year. There should also be added to the civil-service list a janitor and a printer. These, supplemented with necessary help of enlisted men, would furnish a fair working force in the secretary's office and around the college building.

Mr. Cornelius Collins, the college librarian, has rendered satisfactory service, and deserves credit for the excellent condition of the library.

Very respectfully,

MILTON F. DAVIS,
Captain, First Cavalry, Secretary.

APPENDIX B.

DEPARTMENT OF TACTICS,
Fort Leavenworth, Kans., July 21, 1903.

THE SECRETARY, GENERAL SERVICE AND STAFF COLLEGE,
Fort Leavenworth, Kans.

SIR: I have the honor to submit the following report on the work of my department during the school year 1902-8:

PERSONNEL OF THE DEPARTMENT.

The following officers were assigned to duty in the department of tactics: (1) Capt. Joseph T. Dickman, Eighth Cavalry; (2) Capt. L. C. Scherer, Fourth Cav-

alry; (3) Capt. W. H. Simons, Sixth Infantry; (4) Capt. L. M. Welch, Sixth Infantry; (5) Capt. R. J. Maxey, Twenty-fourth Infantry.

Captain Simons was on leave of absence during the months of November and December, 1902; Capt. S. J. B. Schindel, Sixth Infantry, performed his duties during that period.

ORGANIZATION OF THE CLASS.

Of the 96 student officers ordered to the college, 11 were still absent on October 9; on October 28 all had arrived except Second Lieut. G. R. Crawford, Eleventh Infantry, who reported on December 8, 1902.

The class was divided into eight sections of twelve members each. This arrangement was maintained throughout, except for the purpose of recitations in drill regulations, the cavalry officers in the latter case being divided into three sections and the infantry into five. For instruction in riding the class was divided into four platoons. One-fourth of the class was assigned to each of the troops, E, F, G, and H, Fourth Cavalry, for the purpose of obtaining mounts when required for duty or exercise.

ALLOTMENT OF TIME.

The calendar from September 1 to December 21, 1902, shows seventy-nine days available for school purposes; of these forty-nine half days were allotted to the department of tactics.

The second term, from January 4 to June 30, 1903, contained one hundred and twenty-seven working days; of these one hundred and five half days were assigned to the department of tactics. Total for the year, one hundred and fifty-four half days.

SUBJECTS STUDIED.

This time was utilized in the study of the following subjects:

1. Security and information.
2. Small Arms Firing Regulations.
3. Manual of Guard Duty.
4. Infantry Drill Regulations.
5. Cavalry Drill Regulations.
6. Organization and tactics.
7. Hippology.

LECTURES.

Lectures were delivered on the following subjects, or furnished in printed form.

1. Modern Changes in Firearms and their Tactical Effects.
2. Instruction in Patrolling.
3. Small Arms Ammunition Supply.
4. Patrol Duty and Equipment Therefor.
5. Description of the Horse.
6. The Skeleton of the Horse.
7. Articulations, Ligaments, and Tendons.
9. Soundness and Unsoundness.
10. The Horse's Foot.
11. Internal Organs of the Horse.
12. Sanitary Organization.
13. Charts and Tables of Organization of Troops.
14. Field Orders, Messages, and Reports.
15. Discussion of Exercises in Patrolling.
16. Solution and Discussion of Field Exercise No. 2.
17. Solution and Discussion of Field Exercise No. 3.
18. Solution and Discussion of Field Exercise No. 4.

DEMONSTRATIONS IN FIELD ARTILLERY.

The whole class was divided into sections, and, under direction of Maj. H. M. Andrews, Artillery Corps, the details and workings of siege batteries, mountain batteries, and rapid-fire guns were explained by exhibition of the pieces and harness, and lectures on the details of construction and operation.

PRACTICAL WORK.

The practical work of the department was classified as follows:

1. Infantry Drill Regulations. Practical examination in the school of the soldier and in the school of the company; cards A and B.
2. Cavalry Drill Regulations. Practical examination in the school of the soldier, school of the trooper, and school of the troop; cards A, B, and C.
3. Manual of Guard Duty. Tours of duty as officer of the day and as officer of the guard.
4. Security and information. (a) Patrolling on the map (14 exercises); (b) patrolling in the field (three exercises).
5. Organization. Problems (2) in the organization of a division and a corps.
6. Writing of orders. Daily practice for three weeks in writing orders on the blackboard.
7. Tactical exercises on the map. Three exercises (march of a command and outpost problem).
8. Field exercises with troops. The Sixth Regiment of Infantry, the Second Squadron, Fourth Cavalry, the Twenty-eighth Field Battery, and one section of an ambulance company were placed at the disposal of the instructor and utilized for field exercises, the command being officered throughout by student officers. Six exercises were held, and in connection with the three more important ones the whole class was assembled on the morning following the exercise and each student required to submit his solution in writing; then a discussion of the exercise as it actually developed was submitted by the instructor, together with criticism and indications as to correct solution.
9. Hippology. (a) Exercises in determining the age of horses; (b) description of horses; (c) conformation; (d) soundness.
10. Instruction in equitation. Under direction of Capt. R. A. Brown, Fourth Cavalry, 20 lessons in equitation were given to members of the class during November and December and March and April. The following extracts from memoranda submitted by Captain Brown are concurred in:
"Members of the class reporting for this duty included all grades of riders. Some officers had served as high as twelve years in the cavalry arm; others did not have even the most elementary knowledge of the subject. Between these extremes every possible degree of experience was represented.
"To begin with, all officers who had served an enlistment in the cavalry or more than one year as an officer actually with their regiments were excused from instruction. The remainder were then started on a modified recruit course. At the end of eight lessons it was found that so many of the students were physically unequal to the demands of such a course, and so many were excused by medical officers for ailments disqualifying them for riding, that an entirely different course suggested itself during the interval of over two months between the two parts of the course.
"Accordingly the lessons in March were all with the saddle—about one-half with the watering bridle and half with the curb bridle and wearing the saber. These lessons were given with the idea of preparing the officer to appear before troops, mounted, wearing saber and spur and prepared to take care of himself and his horse.
"All the members of the class who attended instruction, with a few exceptions, learned to saddle and bridle their horses correctly. They also learned to mount and dismount properly, and they acquired a knowledge of the correct military seat. Many of the class made considerable progress in acquiring the seat at all gaits, but the lessons were too few to settle them into the seat as a matter of habit.
"It is suggested that the lessons, whatever their number, be given in one continuous series. It requires three or four lessons to harden the men so that they do not suffer physically. Thus 15 lessons given continuously are more beneficial than 20 lessons divided into two series. A favorable time for such a course of riding lessons would be from the middle of February to the middle of April."
The importance of an elementary knowledge of equitation on the part of all officers is so great and the exercise itself is so beneficial to young men that a progressive course of about 30 lessons of one hour each should be given to all student officers, the season extending from January to May.
11. Essays. In compliance with the college regulations, each student officer prepared and submitted an essay on a professional subject. Publication of the best five in the Cavalry Journal is recommended, consent of the author being obtained for that purpose.

RECOMMENDATIONS.

It is of course desirable that the whole class be present on the opening day of the first term, so that all may start on the same footing. Another source of annoyance during the past year was the necessity of frequent examinations of student officers for promotion. The latter being of paramount importance, these officers were allowed some time for preparation, and thus practically two weeks were lost to them, perhaps at an important period of the course, and the instructor's plans for the smooth working of his department were seriously disturbed.

Instructors.—Before the Spanish-American war the instructors and assistant instructors at the Infantry and Cavalry School were taken from the Army at large. This afforded the advantage of greater selection and did not deprive the garrison of Fort Leavenworth of a large part of its officers.

Since the war the two years' course of the school has been condensed into one, and the classes have been more than doubled in size. The necessity for having competent instructors who can devote all of their time to their educational duties is therefore more apparent than ever. The thoroughness of instruction, especially in the practical work, is necessarily impaired by the reduction in time available; an effort must be made to compensate for this by increased labor on the part of the instructor and his assistants.

Maps.—The maps of the Fort Leavenworth Military Reservation and the adjoining country are out of date, the one compiled by the undersigned and printed for use of his and other departments and for the garrison being now seven years old and the plate worn out. It has been considered an advantage by the map-making department in past years not to have a good map of the reservation, because it interferes with the convenience of instruction in military topography. If this objection still be held valid, it is suggested that the country east of the Missouri River and that south of the city of Leavenworth can be utilized for practice in sketching, but is not likely ever to be needed for tactical exercises. At all events, a good topographical map of the reservation and the country as far west as Lowmont is a necessity for the practical exercises of the college and the post. Work on such a map should begin at once and a plate made on copper before the beginning of the next school year.

Fencing.—Some of the student officers organized a fencing class, with the instructor of the Kansas City Athletic Club as teacher. The attendance being voluntary, only a moderate amount of benefit was derived.

In order to provide the young officers with beneficial and instructive exercise during the winter months classes in fencing and the use of the broadsword should be organized. Compulsory attendance would improve the set-up and activity of officers who have not had the advantage of systematic physical training.

Troops.—The practical work of the department of tactics involves the use of troops to a considerable extent. At a post which is subject to frequent inspection and continual observation, where there is a great deal of routine work and little if any credit is given for connection with the college, such additional work is liable to become irksome. Under these circumstances it was most gratifying to observe the marked interest of the enlisted men in the field exercises, which contributed very materially to the success of the work.

At field exercise No. 6 the total enlisted strength of the companies was as follows:

Second Battalion:		Third Battalion:	
E	31	I	27
F	35	K	28
G	22	L	28
H	31	M	29
Total	119	Total	112

Similar deficiency appeared in field exercise No. 1, and also in the cavalry in field exercise No. 5.

It is hardly necessary to point out the desirability of having organizations of greater strength than shown by the above figures.

Field exercises.—The diversified terrain of the Fort Leavenworth Reservation is admirably suited to the purposes of exercises in minor tactics. Although the reservation appears large on the map, it is considerably cut up by a number of obstacles, such as three railroad tracks, with double lines of wire fence, and an electric road. The new prison reservation also interposes wire fences without gates, and there is prospect of more of them. The area available for actual use

of troops is therefore limited; for mounted troops a considerable portion is impracticable on account of deep arroyos without crossings.

The fact that egress to the east and north is cut off by the Missouri River, confines the operations to the west and south and renders it difficult to find a sufficient variety of logical suppositions on which to base general ideas for practical exercises.

If the course in practical work is to be enlarged in conformity with the improved programme of instruction and the probable increase in the size of the garrison and of the units composing it, the use of ground outside the limits of the reservation will become very desirable. It is believed that permission to use the ground west to the Kickapoo road, southwest to Hund Station road, and south to Barnes road, during the season when there are no crops to be damaged, say from the middle of November to the end of March, could be secured by payment of a small rental, strict assurances as to entrance of premises, and agreement to repair damage to fences. Perhaps the same could be obtained in exchange for regulated grazing facilities, which would also improve the reservation by keeping down weeds and underbrush. There are many days in the late fall and even in winter in this latitude which are well suited to the field exercises of small bodies of troops.

A march to Fort Riley, establishment of a camp, preliminary solution of tactical problems, and, finally, participation in the maneuvers would bring about an ideal culmination of the course in practical work in this department.

Very respectfully,

J. T. DICKMAN,
Captain, Eighth Cavalry, Instructor.

APPENDIX C.

DEPARTMENT OF ENGINEERING.

GENERAL SERVICE AND STAFF COLLEGE,
Fort Leavenworth, Kans., July 23, 1903.

The SECRETARY, GENERAL SERVICE AND STAFF COLLEGE,
Fort Leavenworth, Kans.

SIR: I have the honor to submit the following report of the work of the department of engineering of this college during the college year, September 1, 1902, to July 23, 1903.

PERSONNEL.

Capt. Thomas H. Rees, Corps of Engineers, instructor.

First Lieut. W. F. Nesbitt, Sixth Infantry, assistant instructor until October 5, 1902, when relieved, owing to promotion and change of station.

Capt. Edwin T. Cole, Sixth Infantry, assistant instructor from October 6, 1902.

First Lieut. G. M. Hoffman, Corps of Engineers, assistant instructor.

First Lieut. G. A. Youngberg, Corps of Engineers, assistant instructor.

Second Lieut. W. Willing, Corps of Engineers, assistant instructor.

Student officers, 96.

TEXT-BOOKS.

Root's Military Topography and Sketching.

Beach's Manual of Military Field Engineering.

FIRST SEMESTER.

[September 1 to December 20, 1902.]

Subject: Military Topography, to Chapter XXI, page 290.

THEORETICAL WORK.

	Half days.
20 advance lessons	20
7 partial review lessons	7
5 general review lessons	5
2 lectures.	
Total	32

PRACTICAL WORK.

Eight problems in surveying, as follows:

1. Compass survey, including contouring.
2. Plane table survey, including contouring.
3. Transit and stadia survey, including contouring.
4. Leveling for profile and grade and cross-sectioning for contours.
5. Measuring base line, differential leveling, and determination.
6. Triangulation.
7. Running contours on ground with transit.
8. Sextant survey by intersections from measured base elevations with clinometer.

The above problems included also prolonging a line, ranging out lines, measurements with tape and chain, and instruction in the care and adjustments of instruments.

Working hours were from 8 a. m. to 12 m. and from 1 p. m. to 5 p. m. Average time devoted to each problem was four and one-half days, half of which was field work and the other half plotting. The reduction of notes was done mainly at night.

	Half days.
Total time for practical work	38
Theoretical work as above	32
Examinations	3
Aggregate first semester	73

SECOND SEMESTER.

[January 1 to July 23, 1903.]

Subjects: Military topography, Part II (sketching); military field engineering; topography, Part II (theoretical).

	Half days.
7 advance lessons	7
5 partial review lessons	5
4 general review lessons	4
Total	16

PRACTICAL WORK.

	Half days.
Seven problems, as follows:	
1. Determine length of pace and construct working scale and scale of H. E.	1
2. Road sketch with notebook, compass, and clinometer:	
Preliminary	1
Record	2
3. Position sketch with field drawing board and compass:	
Preliminary	1
Record	2
4. Road sketch with sketching case:	
Preliminary	1
Record	2
5. Outpost sketch without instruments:	
Preliminary	1
Record	2
6. Road sketch, mounted, with sketching case:	
Preliminary	1
Record	2
7. Road sketch, mounted, with notebook and compass, record	2
Total	22

FIELD ENGINEERING, THEORETICAL.

18 advance lessons	13
9 review lessons	9
Total	22

PRACTICAL WORK, FIELD FORTIFICATION.

1. Tactical location of trenches and fieldworks.
 2. Construction of trenches.
 3. Construction of high-wire entanglement.
 4. Construction of low-wire entanglement.
 5. Construction of loopholes on parapet.
 6. Construction of abatis.
 7. Construction of palisade.
 8. Construction of fascine.
 9. Construction of gabion.
 10. Construction of hurdle.
 11. Construction of revetments.
 12. Trace and defilade a fieldwork.
 13. Construct profiles of fieldwork.
- Time, 16 half days.

MILITARY FIELD ENGINEERING.

1. Use of cordage; knots, lashings and splices, use of tackle.
 2. Construct barrel raft.
 3. Assemble the canvas ponton.
 4. Birago trestle bridge on land.
 5. Birago trestle bridge in water.
 6. Bridge 100 feet with canvas pontons.
 7. Bridge 225 feet with wooden pontons.
 8. Double-lock spar bridge with trestle approaches, length 75 feet.
 9. Pile bridge, length 137 feet.
- Time, 12 half days.

SUMMARY SECOND SEMESTER.

	Half days.
Topography, Part II:	
Theoretical	16
Practical	18
Field engineering:	
Theoretical	22
Practical	28
Lectures	2
Examinations	3
Total	98
Total for year	162

The work in the department during the past year was seriously interfered with by two circumstances:

First. A considerable number of the student officers were unable to report at the college at the beginning of the year and lost from one to two months of the course. They were required to make up this lost time during the remainder of the year, to the detriment of their marks and standing.

Second. A number of the student officers were taken away from their college duties in order to undergo examination for promotion and were absent from one to two weeks; this also to their probable detriment in marks and standing.

It is most desirable in the interest of the college and of the student officers that nothing be permitted to interfere with or to interrupt the college work.

The work of the assistant instructors has been arduous and has been carefully and faithfully performed.

Student officers have shown great interest in the course and have, with few exceptions, performed their work with care, industry, and efficiency.

RECOMMENDATIONS.

It is the opinion of the assistant instructors of this department, concurred in by the instructor, that the text-book on military topography used during the past year has not been entirely satisfactory. No text-book is known, however, which in one volume and within reasonable limits as to number of pages covers this subject satisfactorily. It is recommended for the coming year that the course be supplemented by a series of lectures, which may, with the approval of the commandant of the college, be printed and become part of the course, with a view

to their final publication in text-book form in case they receive the favorable recommendation of the college staff and approval of the commandant.

There are subjects of study and practice which might advantageously be added to the courses of this department, but the present college course of one year will not permit of any additions to the existing curriculum. In fact, the time now allotted to engineering is not sufficient for the proper and thorough treatment of the subjects studied and for the practical work connected therewith. Recommendations in the direction of an extension of the course in engineering will therefore be postponed until a prospect of an additional allotment of time makes them pertinent.

Very respectfully.

THOS. H. REES,
Captain, Corps of Engineers, U. S. Army.

APPENDIX TO REPORT OF INSTRUCTOR, DEPARTMENT OF ENGINEERING.

PROBLEMS IN PRACTICAL WORK.

The problems will be designated and referred to in schedules and instructions by the numbers set before them, as follows:

1. Length of pace and scales
2. Road sketch, with notebook, prismatic or box compass, and clinometer.
3. Position sketch, with drawing board, box compass, protractor, and scale.
4. Road sketch, with sketching case.
5. Outpost sketch, without instruments.
6. Road sketch, mounted, with sketching case.
7. Road sketch, mounted, with notebook, compass, and clinometer.
8. Road sketch, mounted, with notebook and compass, barometer; distances by odometer on wagon.
9. Tactical location of trenches and fieldworks. Construction of trenches.
10. Construct loopholes on parapet. Construct low-wire entanglement.
11. Construct high-wire entanglement.
12. Construct abatis and palisade.
13. Use of cordage.
14. Construct fascine and gabion.
15. Construct hurdles. Construct revetments.
16. Trace a fieldwork and defilade it. Construct profiles.

Date (1903).	Problems for sections.			
	First and fifth.	Second and sixth.	Third and seventh.	Fourth and eighth.
Mar. 31, Tuesday, 1 p. m.	2	4	4	5
Apr. 1, Wednesday, 1 p. m.	3	4	5	6
Apr. 2, Thursday, 1 p. m.	4	5	6	2
Apr. 3, Friday, 1 p. m.	5	6	2	3
Apr. 6, Monday, 1 p. m.	6	2	3	4
Apr. 7, Tuesday, 8 a. m.	2	3	4	5
Apr. 8, Wednesday, 8 a. m.	3	4	5	6
Apr. 9, Thursday, 8 a. m.	4	6	6	2
Apr. 10, Friday, 8 a. m.	5	6	2	3
Apr. 13, Monday, 8 a. m.	6	2	3	4
Apr. 14, Tuesday, 8 a. m.	9	10	11	7
Apr. 15, Wednesday, 8 a. m.	10	11	7	9
Apr. 16, Thursday, 8 a. m.	11	7	9	10
Apr. 17, Friday, 8 a. m.	7	9	10	11
Apr. 20, Monday, 8 a. m.	12	10	14	8
Apr. 21, Tuesday, 8 a. m.	13	14	8	12
Apr. 22, Wednesday, 8 a. m.	14	8	12	13
Apr. 24, Friday, 8 a. m.	8	12	13	14
Apr. 28, Tuesday, 8 a. m.	15	16	15	16
Apr. 30, Thursday, 8 a. m.	16	15	16	16

If interrupted by rain on any day, the problem for that day will be omitted and the schedule will stand as published.

Omitted problems will, if practicable, be taken up at the end of the season.

Rainy days will be devoted to recitations in general review, the first lesson for which will be in Root's Military Topography and Sketching, lessons 15 and 16 of lesson sheet.

The second general review lesson will be lessons 21 and 22 of sheet, and so on, two advance lessons at a time, through Root's Topography and Beach's Manual of Field Engineering.

The field uniform will be worn for all practical work.

The sections detailed for problems 6, 7, and 8 will be prepared for mounted work.

For the 8 a. m. reconnaissance problems (2 to 8, inclusive) the sections will take lunches and be prepared to stay out all day.

TOPOGRAPHICAL SKETCHING (PRACTICAL).

PROBLEM 1.—DETERMINE LENGTH OF PACE.

The brick walk on Scott avenue is 970 feet 4 inches long between the following points, viz, from the stone cross curb at the northwest corner of Pope and Scott avenues to the stone cross curb at the junction of Grant and Scott avenues. The above distance is over brick only and is included between the stone curbs mentioned.

The brick walk across the south end of the main parade is 524 feet 2 inches long between the following points, viz, from the stone cross curb at the east end of the walk to the beginning of the stone crossing on McClellan avenue. This distance is over brick alone and is limited by the stone crossing at either end.

The above distances will be used for determining lengths of paces, with careful attention to the following directions:

1. Take a natural swinging step that you could maintain for a long march.
2. Pace the distance yourself and do not permit your step or cadence to be influenced by others.
3. Pace each distance four times, twice on the walks and twice on the parallel roads between the same limiting lines. Do not neglect the last partial pace (one-fourth, one-half, or three-quarters) that may finish the distance.
4. If the variation in the first set of four determinations is greater than 2 per cent, proceed with the second set of four determinations over each distance, seeking greater regularity in length and cadence of pace.
5. A record will be kept on blank forms furnished, and results, with scales, will be submitted to instructors at recitation hours on March 20, original notes and results to be retained in notebooks.

INSTRUCTIONS FOR PROBLEMS IN MILITARY TOPOGRAPHY.

PROBLEMS 2 TO 8, INCLUSIVE—SKETCHING.

General instructions.—The sections will assemble at 8 a. m. in their respective section rooms, where the instruments will be issued by the instructors. Work on the day's problems will begin at once and will continue without interruption (except necessary time for midday luncheon in the field) until 5 p. m., when the sections will again assemble at section rooms and turn into instructors the sketches, reports, and instruments. In fairness to the whole class, work after this hour can not be permitted, and no work or instruments will be taken to quarters at any time. Omitted problems are not considered in averaging marks. Officers who so desire can make up omitted problems on Saturdays, and such work will be marked, provided it is performed under the conditions and within the hours prescribed, and provided a certificate to that effect is attached to the sketch. Unfinished sketches will, after they have been marked, be returned to the officers who wish to complete them at their leisure, but they must finally be turned in for examination by the college staff. Such additional work will have no effect on marks.

All road sketches will be drawn to a scale of 3 inches=1 mile, with contours at 20 feet V. I.

Position and outpost sketches will be drawn to a scale of 6 inches=1 mile, with contours at 10 feet V. I.

All work will be done in pencil. Contours will be drawn in red pencil. Numbers or letters in circles, used for reference marks to reports, will be in red pencil.

H H black pencils are best for this work. Keep all pencils well sharpened.

Show by conventional signs (see text) the following incidents and features: Fenced or unfenced roads; bounding fences of inclosures, and whether stone, hedge,

wire, or board; grass land; cultivated land; woods; cuts and embankments; gullies; farm and other buildings; villages; railroads; telegraph lines; streams; marsh; other incidents of water; bridges.

On every sketch place magnetic meridian; scale of H. E.; V. I.; scale of yards to reach 50 yards; R. F. Title thus: "Problem No. —. Road sketch (mounted or foot) from — to —. Date —" or "Problem No. —. Position (or outpost) sketch. Place —. Date —."

Sign official signature in lower right-hand corner of sketch.

To every road sketch attach a sheet of paper containing the title of the sketch as above, and a report (see text) on roadway, bridges, rate of marching, towns and villages, character of surrounding country, streams, halting places, camping grounds, positions, lateral communications, railroads, telegraph lines, miscellaneous information, referring to places on the sketch by number in circles, thus (4), in red pencil. Include only such of the above items as are applicable to the sketch. Attach official signature at bottom of report.

Signatures to sketches and reports will mean that the results submitted and signed are entirely the work of the signer and that no assistance or information has been received or used. If this is not the case, state what assistance has been received, and sign.

For all problems student officers will provide for themselves and have always ready for use 2 pencils (H H drawing are best), 1 red pencil, 1 eraser, 1 pocket-knife, 6 thumb tacks, rubber bands, watch. Small spring-bow dividers are convenient for laying off H. E.'s. A small pocket tape 12 to 20 feet or a measured length of strong cord are often useful.

In mounted work the enlisted man who is detailed as assistant will keep time, hold horses, and assist as directed. He will probably know the gait at which the pair of horses was rated and should be depended on to keep that gait.

The working scales issued are made to a scale of 3 inches = 1 mile. For use in position and outpost sketching, double the count of paces or halve the numbers on the scale. The issued scales of H. E. are applicable to both purposes, because while the scale is doubled the V. I. is halved.

In all road sketches the sketch will be extended laterally, by estimated or paced offsets, to a distance of 200 or 300 paces on either side of the traverse; at distances between 400 and 800 paces on either side, sketch only the more important details, locating them by estimation or by cross bearings.

In all problems use the instruments issued in the prescribed manner.

Work independently, without reference to what others near you may be doing.

Prepare in advance for each problem by consulting the text-book and by reading the instructions that pertain to the day's work.

It must not be understood that the outfit and method specified for any problem are the only ones suitable for that class of work. On the contrary, any of the outfits and methods are applicable to all the different classes of work. A road sketch may be made "without instruments," or with the drawing board, compass, etc., and the position or the outpost sketch may be made with the notebook or with the sketching case.

PROBLEMS 2 AND 7.—ROAD SKETCH, FOOT OR MOUNTED, WITH NOTEBOOK, COMPASS, AND CLINOMETER.

Knowing the general direction of the road or route to be sketched, mark that direction (say SW. or E., etc., as the case may be) at the top of the right-hand page, then place the corresponding directions at bottom, sides, and corners of page.

Note the readings of the compass for bearings NES. and W., and place these readings on the appropriate divisions of the protractor, near the corresponding letters. Finish marking the protractor at all 10-degree points.

At bottom of left-hand page write place, date, name of sketcher, description of compass used, length of pace (or gait and rate of horse), and designation of road to be sketched "— to —." At bottom of middle column write station 1, and near bottom of right-hand page assume a point for station 1. Record notes from bottom toward top of left-hand page, and carry the sketch along simultaneously on right-hand page. The scale for this sketch should be about 1,000 paces to 1 inch on foot; and about eight minutes to 1 inch mounted, at walk.

Sketch free-hand, taking directions by eye from the printed protractor and distances by eye from the printed scale. Indicate hill forms and slopes by form lines sketched free-hand, without attempting located contours. This sketch is intended merely as an aid to the memory and a guide to the eye in making the final plotted sketch.

At each halt record in the middle column distance along trail and new slope in advance; in adjacent columns record offsets, right or left and slopes right and left, and in outer columns record description of objects located, and bearings and descriptions of more distant objects. When the halt is at a station, add to the above notes in middle column the number of the station and the bearing of the new course. Bring the sketch up to the point of halting.

On pages following the sketch enter notes that will be needed in preparation of descriptive report, with proper reference numbers to sketch.

When 3 miles on foot or 5 miles mounted are completed (but, whether completed or not, never later than 1.30 p. m.) cease field work and return to Sherman Hall. At drawing desk in drafting room plot the day's work. Plot first the traverse line with check bearings, go through notes a second time and plot offsets, and side bearings and distances, and sketch the located details. Go over notes a third time and with recorded slopes and scale of H. E.; dot in the contour points on the traverse line and side shots, and mark their heights, assuming height of station 1 to be, say, 800 feet. Sketch contours in red pencil, shaping them by reference to form lines of book sketch. Complete sketch and report and turn in work in accordance with "General instructions" at 5 p. m.

PROBLEM 3.—POSITION SKETCH WITH DRAWING BOARD, BOX COMPASS, PROTRACTOR, AND SCALE.

The position to be sketched will be selected and indicated by the assistant instructor. The portion allotted to one sketcher should extend not less than 1 mile in length and not less than three-quarters of a mile in depth.

Select a suitable base line, from the ends of which good views of the position can be had, and about 700 to 900 yards long. Occupy initial station at one end of base, and read and plot bearings of base and of lines to points selected as check points. Read the vertical angles to the same points and record them + or — on the plotted lines. Run a traverse to other end of base, halting at suitable points to determine neighboring features and slopes. Sketch them in as soon as determined, using red pencils for contours and black for everything else. The traverse along the base should be straight, if possible, but this is not absolutely necessary.

At other end of base read and plot bearings of base and of lines to selected check points. Read vertical angles to same points, and record same on plotted bearings. The intersections will determine the position of the check points, and their elevations can be determined by laying off the H. Es. and counting 10 feet V. I. to each H. E., taking the mean of the two determinations for the height of each check point.

The foregoing operations correspond to measurement of base, triangulation, and leveling of an instrumental survey, and there has already been accomplished the filling in of details along the base line. Next run traverses, preferably along ridges and spurs and along water courses, taking care to begin and end each traverse at base or check points. Halt whenever it is necessary to determine adjacent features and slopes, plot the halting point, and then sketch the surroundings, as determined by offsets or by bearings and distances, and plot contour points by slopes and H. E. Draw contours as soon as sufficient C. Ps. are located, studying the shape of the ground to determine shape of contours.

Run the traverse lines in such wise as to add to and build upon the areas previously covered, not covering the same ground twice.

Some topographers prefer to run parallel traverse lines at regular intervals, but it is better to select lines that will determine as large an area as possible on either side, and for this purpose watersheds and water courses are the best lines to run.

When the sketching and the filling in with conventional signs are completed, finish the map in accordance with "General instructions" and write on separate paper a brief report describing the advantages and disadvantages of the position; the character of the surrounding country: the communications, front, rear, and lateral; artillery positions; obstacles; materials available for defensive purposes, and miscellaneous information of military application.

Cease work in time to submit results in section room at 5 p. m.

PROBLEMS 4 AND 6.—ROAD SKETCH ON FOOT OR MOUNTED, WITH SKETCHING CASE.

The scale, the V. I., the general principles involved, the purpose, and the details to be included are the same for both sketch and report as in problems 2 and 7, q. v.

At the initial station, 1. face squarely in the general direction of the route to be sketched. Hold the sketching case in normal position (compass to right) squarely in front of you and turn the bars or lines of compass box to a position parallel

with the needle, and be careful throughout the work not to change these bars or lines. Place the ruler parallel with bars or lines and draw line to represent magnetic meridian. Mark north end with half arrowhead. Assume point near middle of near edge for station 1. Face squarely in direction of first course; orient the board; point the ruler along first course to station 2 (glancing at compass to keep oriented), sliding it to place its edge on station 1. Clamp ruler and arm and draw line from station 1 toward station 2. Take side shots, if necessary, always facing in desired direction and reorienting the board. Read slopes and set off corresponding H. Es. front, right, and left. Sketch adjacent features and contours.

Pace (or time, if mounted) along road toward station 2. Halt whenever necessary to determine adjacent features or new slopes. Plot halting point first and then sketch surrounding features and contours. When the halt is at a station where the traverse turns to a new direction, number the station and plot new direction, as at station 1. Keep the sketch fully up to halting points, but not much beyond.

Take frequent check bearings at distant landmarks, even if beyond limits of paper. In notebook jot down remarks and memoranda for report. If the sketch runs off the paper, draw a cross line to end it and begin anew, as at first station, with a new orientation and meridian if necessary.

Having finished 4 miles if on foot, or 7 miles if mounted, complete the sketch in accordance with "General instructions" and write report. Cease field work in any event early enough to turn in results at section room at 5 p. m. Allow for returning 18 minutes per mile if on foot, and 8 minutes per mile if mounted (trotting).

PROBLEM 5.—OUTPOST SKETCH WITHOUT INSTRUMENTS.

It is assumed that in actual service an officer, being without any sketching instruments, will improvise the following outfit: The open notebook or a pad of paper, or a small piece of board with paper attached, to be used as a plane table; a piece of paper folded several times, or an extra pencil, or a piece of wood whittled straight and flat, to be used as a ruler or alidade; the known length of a finger or of the span of the hand will serve as the basis of a scale of inches, and with this a working scale of paces can be constructed and laid off on edge of ruler; three sticks tied together near the top and spread apart at the foot will form a convenient support for the plane table; select an edge of the board or pad that is straight and at its middle point drop a perpendicular 6 inches long; at its extremity lay off on perpendiculars to right and left divisions of one-tenth of an inch, each representing 1 degree for a center at the point first assumed. With a piece of string tied to a stone, knife, or key, the slope board is completed.

In working this out as a problem the field drawing and slope board will be used in lieu of the pad or improvised board. All else will be improvised in the field, except that tripods may be prepared beforehand if desired. Every officer is supposed to have at all times a pocket notebook, pencils, and knife. The issued scales of H. E. will be used. Assistant instructors will select and indicate the outpost to be sketched. Proceed to the assumed position of the picket. Prepare first a scale of inches and tenths as accurately as can be estimated, and then construct a working scale of paces at 6 inches equal 1 mile, to suit length of pace. Mark this scale on edge of improvised ruler. Advance to assumed line of observation and select a station giving good view as one end of base. Set up the board as a plane table and assume a point for station occupied. Sight toward all points which it is desired to locate and draw the corresponding lines; read vertical angles to same points and record them along the corresponding lines. Sketch the neighboring details and contours; run a plane table traverse along the line of observation, plotting courses, distances, details, and contours at suitable halting and station points as it proceeds. As distant points toward the front, hitherto invisible, come into view plot their direction lines and record vertical angles, and remember to get intersections on them from another point of traverse. Select the final station with reference to getting a good view, and make it the end of the base line just traversed. The base line traverse need not be a straight line. Its length should be from 600 to 800 yards.

At this base station, orient the board carefully and plot direction lines toward all points previously sighted, thus determining them by intersections; read and record vertical angles to same points; having assumed height of first base station at say 800 feet, that of the second base station becomes known by slope and H. Es. between them. Lay off the proper H. E. along each direction line and thus determine heights of intersected points; adopt the mean of the two determinations.

Fill in by sketching intermediate details with reference to plotted points, interpolate C. Ps., and sketch contours, shaping them by careful study of the ground. Finish the sketch in accordance with "General instructions" (an approximate true meridian may be determined by watch and sun). Write report similar to that required for the position sketch (problem 3). Turn in work in section room at 5 p. m.

NOTE.—In the case of the outpost sketch it is assumed that the ground in front of the line of observation can not be traversed, owing to the presence of the enemy.

PROBLEM 9.

Tactical location of trenches and fieldworks (8 a. m.).—The sections will proceed to the field with the assistant instructor, who will select and point out a position which is to be occupied and hastily fortified. The sections will then be extended at from 50 to 100 yards intervals, each officer posting himself without reference to his neighbors, at a point which he selects as the proper location for the trench. He will study the ground about him and be prepared to answer questions on the following points or such of them as apply to the locality:

Reasons for selecting the point occupied.

Direction of trace of trench and whether straight, salient, or re-entrant, continuous or with intervals.

Dead spaces or sectors without fire, cover or screens for enemy, obstacles, commanding points.

Kind of trench suitable for locality, material available in vicinity for defensive purposes.

Any places in front that should be held as advanced posts.

Posts of supports and reserves.

Any good sites or necessity for fieldworks or artillery positions in immediate vicinity.

Other questions suggested by surrounding features and incidents.

As soon as the extension is begun the instructor will follow along the line, assembling the section as he goes, and questioning each student officer in succession on the above points.

As soon as the sections are assembled the exercise may be repeated on another line if time permits. The assembled portion of sections will be attentive to questions, answers, and explanations, and ready to answer questions that may be passed around.

Construction of trenches (p. m.).—Assemble on Engineer Hill (between the two branches of Merritt Lake) at 1.15 p. m. Having taken tools (pick and shovel), the sections will be extended on the military crest at 5-foot intervals, determined by extending the arms laterally, knuckles touching. The alignment is verified and corrected by the instructor, who will then direct work to begin.

The line of the toes will be the cutting line for front of trench, and a line from front to rear between the heels will mark the left of each task. Trace these lines by scoring through sod with pick; front to rear 6 feet on left of task; then cutting line left to right 5 feet, joining those of adjacent tasks.

Dig the lying trench at first only 3 feet wide from left to right of task. This gives partial cover quickly, prevents interference of adjacent diggers, and defines the tasks clearly. Then finish the remaining 2 feet on right of task. Maintain a mark on the berm to show left of task.

As soon as the instructor has verified the form and dimensions of the lying trench he will direct work to commence on the kneeling trench. Dig first the 3 feet on left of task and then the 2 feet on right. After verification by instructor, proceed, at his signal, to excavate the standing trench, digging first the 3 feet on left of task, then 2 feet on right.

After final verification the tools will be turned in and the sections dismissed, not later than 5 p. m.

PROBLEM 10.

Construct loopholes on parapet (a. m.).—For the first half day's work on this problem the sections will assemble at 8.15 a. m. on north Merritt Hill where old trenches are found. On succeeding days the assembly will be on Engineer Hill, where the parapets constructed on previous days will be loopholed.

The sections will be divided into parties and designated to construct loopholes. (1) with sandbags; (2) with sod; (3) with head log; (4) with hoppers of boards, alternating in rotation as time permits. Instructions in detail will be given by instructors.

Construct low-wire entanglement (p. m.).—Assemble on Engineer Hill at 1.15 p. m. Secure tools and material under direction of instructor, who will assign different portions of the work to the several organized parties and will supervise the work. Each member of the sections is expected to be familiar with the details of construction and to be able to proceed with his allotted task without special instruction. Construct entanglement of six rows, six stakes in a row.

PROBLEM 11. CONSTRUCT HIGH-WIRE ENTANGLEMENT.

Assemble on Engineer Hill at 8.15 a. m. and 1.15 p. m.
Same instructions as for low-wire entanglement.

GENERAL INSTRUCTIONS FOR PROBLEMS 9, 10, AND 11.

Prepare in advance for each half day's work by consulting text and reading instructions.

The sections will be dismissed at 12 m. and 5 p. m., or earlier if the work is completed.

PROBLEM 12.

Construct abatis (a. m.).—The section detailed for this problem will assemble in front of post administration building and proceed with assistant instructor to the woods at the nearest point where suitable material can be found and cut.

Assume a line to represent trace of trench or fieldwork and make necessary assumptions as to probable lines of approach of enemy. Locate the abatis with proper reference to those lines and begin construction. Working in pairs, equipped with ax and hatchet, cut, trim off twigs and small branches, and drag into place small trees or large branches; arrange them on the selected line, interlacing the branches. As soon as one row 25 yards long is laid, stake it firmly with crossed stakes or hooks cut from branches. Lay a second row in the same manner, overlapping the butts of the first row, and stake it fast. Interlace both rows with five or six lines of wire.

The trees to be preferred for this purpose are those of a stiff, scrubby, straggling growth, with many branches. Thorny trees are best. The diameters of the butts should be from 4 to 6 inches.

If sections are reduced in numbers by absentees, a proportional reduction in length of task will be made.

When completed test the efficiency of the obstacle by trying to penetrate it quickly.

Construct palisade (p. m.).—Assemble on Engineer Hill at 1.15 p. m. Secure tools. The line of the palisade being scored on the ground, dig a trench 12 inches wide and 2½ to 3 feet deep, and in length 1 foot to each member of sections present. Throw the earth to the rear. Then, working in parties of five or six, each party will build and erect a section of palisades as follows: Point the tops of six 12-foot posts. Lay them on the ground, points to the front and butts near the trench, with spaces of about 5 inches between posts; cut two string pieces of poles 6 feet long and flatten one side. Lap them across the posts, 1 foot from tops and 8 inches from butts. Spike them to every post. Carry the section of palisade to its place, raise the top and slide it into the trench. Align it, steady it in a vertical position, and throw in enough earth near the middle to stay it till adjacent portions are set and aligned; then fill in all the excavated earth and tamp it firmly with bars. Spike on short pieces of pole to connect stringers of adjacent portions.

PROBLEM 13. USE OF CORDAGE (A. M. AND P. M.)

Assemble in rear of Sherman Hall at 8 a. m. and at 1.15 p. m.

There will be detailed twelve noncommissioned officers and men of the engineer battalion, each of whom will be prepared to show the correct method of making a certain set of knots, lashings, and splices, viz:

1. Whipping, seizing, overhand knot, rolling hitch, figure eight.
2. Short splice, eye splice, strap.
3. Long splice, square or reef knot.
4. Sheepshank, round turn and two half hitches, clove hitch, timber hitch.
5. Weaver's knot or sheet bend, double sheet bend, Carrick bend.
6. Bowline, bowline on a bight, wall and crown.
7. Cat's paw, blackwall hitch, mousing, lark's head.
8. Square lashing, shear lashing.
9. Gin lashing, sling for barrels open or headed.

10. Reaving tackle, names of parts, snatch block, "round in," "overhaul," "two blocks," power of tackle, field capstan (Spanish windlass).

11. Balk lashing, rack lashing (on side rails).

12. Fisherman's bend or anchor knot, mooring knot.

Student officers in parties of two will, for thirty minutes at each station, learn and practice the knots, lashings, splices, etc., there shown, and will then pass on at word from the instructor to the next station, and so on through the cycle, in six hours.

Then for two hours the instructor will examine his sections in their proficiency.

Calling for a certain knot, lashing, or splice, etc., to be made simultaneously by all members of the sections, he will, after a specified time, examine the results and repeat the exercise in such variety and extent as time will permit. Marks will be based on these results and on the attention and interest displayed during the previous practice.

PROBLEM 14.

Construct fascine (a. m.).—Assemble on Engineer Hill at 8.15 a. m. The sections will be divided into parties of five or six men each. Each party will proceed as follows: Secure tools and material; erect trestles for fascine rack; construct one fascine as described in manual; place it on the pile with others; dismantle the trestles; return tools; dismissed.

Construct gabion (p. m.).—Assemble on Engineer Hill at 1.15 p. m. The sections will be divided into parties of four or five men each. Each party will secure the necessary tools and material and will construct one gabion, as described in the manual; then place gabion in pile with others, return tools, and be dismissed.

PROBLEM 15.

Revetments are usually applied to the interior slope of the parapet of a "field-work," and should be constructed at the same time with the parapet. For purpose of illustration, however, revetments will be constructed against the front of the standing trench.

Assemble at Engineer Hill at 8.15 a. m. and 1.15 p. m.

The following instructions apply to two sections:

Hurdle revetment.—Tools: Three handsaws, 6 picks, 10 shovels, 4 axes, 6 hatchets, 8 mallets, 4 manls, 8 gabion knives; 36 pickets, 2 inches in diameter, 5 feet long; brush, 1 inch in diameter at butt.

Cut away the front of the trench 6 inches and trim to a slope of 3 on 1 for a length of 36 feet, throwing the earth on top of the parapet; drive the pickets with the same slope 5 inches from the earth slope and at intervals of 12 inches. For weaving the hurdle the detail will be divided into three equal parties.

The first party will bring the brush, see that it is properly trimmed, and pass it over the heads of the weavers (second party) as needed.

The second party, working at intervals of 5 feet, receives the brush and weaves it by randing in an out between the pickets.

The third party, with mallets, working in the intervals between the members of the second party, will force the woven brush down and settle it in place with mallet.

Each member of the second party will begin at the left of his five pickets, with the butt of a rod, and weave five pickets to the right, keeping the butt of the rod down and the top well raised. Do not follow the rod to its end, but pass it to the next weaver at the fifth picket.

The members of the third party will assist in the weaving, each confining his work to the 5 feet allotted to the weaver on his left. All of the second and third parties working together force the woven rods down, and the third party settle them snug and close with mallets.

When the first line of rods is woven and settled in place, each weaver starts a new rod in the same manner, except that he begins at the second picket of his five instead of the first, and so on, alternating, always starting the butts on the front side of the picket.

At the left of the hurdle, however, all rods are started on the first picket, alternating front and rear.

At the right of the hurdle the smaller brush or rods will be bent around the last picket and woven back; the larger rods will be cut off.

Finish to a height of 4 feet above the banquet tread. Sew with withes or wire down 2 feet from top. Saw off the tops of the pickets. Fill back with the earth thrown on top of parapet and trim the superior slope, laying sod at the interior

crest. When filling in with earth, spring the hurdle back to a slope of four on one, and anchor it in this position with wire to stakes driven in parapet.

The three parties will change posts at the completion of each third of the hurdle.

Construct revetments with fascines, gabions, sand bags, and sod.—The following instructions are for two sections divided into three parties of seven or eight men each.

First party (fascine revetment): Tools—4 picks, 4 shovels, 3 mallets, 2 cutting pliers, 100 feet of wire; 30 pins, 1 inch in diameter, 20 inches long; 10 stakes, 2 inches in diameter, 2 feet long; 5 fascines cut to a length of 9 feet; 2 handsaws.

Cut away the front of trench 9 inches for a length of 10 feet and trim to a slope of 3 on 1, throwing earth on top of parapet. Place the first fascine against foot of slope, sinking it 3 inches in banquet. Drive 20-inch pins through fascines into earth. Level up with earth and lay next fascine, making the slope of the revetment equal 4 on 1. Fill in with earth and drive pins diagonally through fascine into earth. Continue in same manner to include the fifth fascine, anchoring the third and fifth fascines with wire to stakes driven firmly in parapet. Fill in with earth to the top of each fascine as laid. Finish off the interior crest with 2 layers of sod and trim the superior slope.

NOTE.—In a continuous line of fascine revetment the fascines would break joints in successive layers, and would be full length of 18 feet.

Second party (gabion revetment): Tools—4 picks, 4 shovels, 2 fascines cut to length of 9 feet, 4 gabions.

Cut away the front of the trench 15 inches for a length of 9 feet, throwing earth on top of parapet and trimming to slope of 3 on 1.

Lay a 9-foot fascine at the foot of the interior slope, sinking it 3 inches in banquet. Set four gabions on the fascine, and after partially filling with earth adjust them to a slope of 4 on 1. Fill back with the earth thrown on parapet. Cap the gabions with a 9-foot fascine, level up with earth, and trim the superior slope, laying sod at the interior crest over fascine.

Third party (sand-bag revetment): Tools—4 picks, 4 shovels, 100 sand bags.

Cut away the front of the trench 15 inches for a length of 12 feet, throwing the earth on top of the parapet, and trimming to a slope of 3 on 1. Lay up the revetment of sand bags with a slope of 4 on 1, in headers and stretchers, breaking joints in successive layers, and filling back with earth as the revetment rises. Finish off at a height of 4 feet 4 inches and trim the superior slope.

The party that finishes its revetment first will proceed to the sod revetment. Tools: Four axes, 6 picks, 6 shovels.

One-half the party will cut 120 sods 4 inches by 9 inches by 18 inches. The other half will cut away the front of the trench 15 inches for a length of 6 feet, trimming to a slope of 3 on 1, and throwing earth on top of parapet. The party will then lay up the revetment of sods to a slope of 4 on 1 in headers and stretchers, breaking joints in successive layers, and filling back with earth as the revetment rises. Finish off with headers, grass up at a height of 4 feet 4 inches, and trim the superior slope.

The three parties will then rotate in the different tasks as time permits. For all but the sod revetment the revetments first constructed may be taken down and rebuilt by successive parties. The form and dimensions of the trench and parapet must be preserved throughout the work.

PROBLEM 16.—TRACE AND DEFILE A FIELDWORK AND CONSTRUCT PROFILES. ASSEMBLE ON ENGINEER HILL AT 8.15 A. M. AND 1.15 P. M.

The work to be traced and profiled will be a lunette, with faces of 60 yards and flanks of 30 yards. The faces will make with the capital an angle whose tangent is 3 on 1. The flanks will make with the direction of the capital an angle whose tangent is 1 on 2.

Two sections will work on the right of the capital and the other two on the left.

Select a point for the salient angle such that the slopes in front (generally toward the south) will be seen from the finished parapet. Direct the capital upon the new Federal prison and trace it on the ground.

The following instructions apply to two sections and to their half of the work:

Tracing.—Lay off from the capital, at the salient, the face angle of 3 on 1. Trace the line of interior crest so determined with tracing tape to a length of 60 yards, fastening the tape by a turn around pegs at 20-yard intervals. At the shoulder angle lay off from the direction of the capital the flank angle of 1 on 2, and trace the interior crest of the flank to a length of 30 yards, fastening the pegs at 15-yard intervals. Next trace the exterior crest on a line parallel to the trace of the interior crest and 12 feet therefrom, with pegs opposite those of the inte-

rior crest. At the angles of the trace the pegs will be on the line that bisects the angle. Erect 12-foot posts (2 inches by 4 inches) at every peg of interior crest. Trace the gorge by a single line of tape, with pegs at 20-yard intervals.

Care must be taken to lay all tapes flat on the ground and to avoid disturbing the tape after it is laid.

Deflading.—Plant firmly two 6-foot poles 12 feet apart on the gorge line and stretch a string at a height of 3 feet 6 inches above the ground. Plant a third pole 10 feet to the front and carry the strings to it. Sight from the gorge line to the hilltop in front, as determined by trial which has the greatest command, and adjust the strings on the front pole in the plane thus determined. This fixes the tangent plane, and the plane of deflade must be 4 feet 6 inches higher. Sight in the plane of the strings to the posts on the trace of the work and mark the points of intersection. On each post measure 4 feet 6 inches higher, and the points so determined will fix the height of the interior crest.

Profiling.—The sections working on the right of the capital will construct profiles on the capital at one post of the face, at the shoulder angle, at the middle of the flank, and at the rear end of flank—five profiles for five parties of four or five men each.

The sections on the left of the capital will construct profiles at the two posts of the face, at the shoulder angle, at the middle point of the flank, and at the rear end of the flank—five profiles for five parties of four or five men each.

Each party will construct its profile as shown in the Manual, except that a diagonal brace will be inserted between the uprights at the interior and exterior crests, and extended to the rear will be nailed also to the uprights of the banquet. When the profile is erected side braces will be added to keep it vertical.

PRACTICAL WORK—MILITARY BRIDGES.

PROBLEM 17.

(a) *Construct barrel raft.*—Two sections will construct a raft of 10 barrels as described in Manual, paragraph 330 and plate 43, figs. 1 and 2. After completion the raft will be dismantled, except the last two, which will be framed together, side by side, with five cross transoms lashed to gunwales. On the transoms will be lashed two gunwales to support balks of roadway. This double raft will be subsequently used in a floating bridge.

(b) *Assemble the canvas ponton.*—Each section will assemble a canvas ponton, floor it with two chess, launch it, equip it with cable, anchor, paddles, and bailing scoops, and will ferry across Merritt Lake and back. The ponton will then be hauled out, dismantled, and all its gear stored.

(c) *Birago trestle on land.*—Two sections will lay an abutment sill and construct two bays of trestle bridge on land to illustrate its use in crossing gullies or building ramp for loading stock on trains. Dismantle and return material.

(d) *Birago trestle in water.*—Two sections will lay an abutment sill on bank of lake and will construct two bays of trestle bridge in water, using a pontoon raft.

Sections first and fifth, second and sixth, third and seventh, fourth and eighth will begin respectively with a, b, c, and d of problem 17, and will rotate in that order till the cycle is completed in two half days; i. e., two hours to each part of the problem.

PROBLEM 18.

(a) *Bridge with advance-guard equipage.*—Four sections will construct the bridge across the north branch of Merritt Lake. Detailed instructions will be given on the ground. When completed the bridge will be dismantled and all material returned. Time, one-half day.

(b) *Spar bridge, double-lock.*—Four sections will construct a double-lock spar bridge across south branch of Merritt Lake. Two sections will work on north bank and two on south bank. Time, one-half day. The bridge will be completed by the other four sections on next half day. Detailed instructions will be given on the ground.

The first, fifth, third, and seventh sections will begin with (a), and the second, sixth, fourth, and eighth with (b), alternating on second half day.

PROBLEM 19.—BRIDGE WITH RESERVE EQUIPAGE.

The whole class will be drilled in the construction of the pontoon bridge on two half days, with such rotation of duties as will give experience in all parts of the work.

PROBLEM 20.—BRIDGE WITH PILE TRESTLES.

The trestles consist each of five vertical piles and are spaced 12 feet 6 inches from c. to c. In each trestle the piles are spaced 3 feet 2 inches from c. to c. The caps are flattened on top and bottom to a thickness of about 6 inches and are drift-bolted or pinned to tops of piles. All trestles are braced to two diagonals spiked to piles. The barks are 15 feet long and are laid five in each bay at intervals of 2 feet 8 inches c. to c. The outer ones are drift-bolted or pinned to the caps and the three inner ones are lashed to hold them in place.

The flooring is made either of 3-inch by 13-foot poles or of 2-inch plank. It is held in place by side rails of poles laid over the outer barks and lashed thereto near trestle bents and at middle of each bay. The abutment sills are caps sunk in the ground and firmly staked front and rear. If a shore trestle is needed between the abutment sill and the water it will consist of a mud sill, five posts, a cap, and two diagonal braces.

Each bay of the bridge is constructed as follows: Build a frame consisting of a cap, the two outer barks, a ledger, and a diagonal. Carry it forward and engage the ends of the bark under the previous cap to which they are temporarily lashed. Revolve the frame to its place by hauling out on a forestay and then lowering by the backstays, using a derrick frame to take the weight. Lay a temporary flooring of four planks or chess. Set the piles from the outer end of the suspended frame, drive them, and saw them off. Shift the frame to place the cap on the piles and driftbolt or pin through cap into top of piles. Lay three more barks and lash them. Floor half the new bay. Brace the trestle with two diagonals spiked to piles. Proceed with next bay in same manner.

Working parties.

No.	Duties.	Number of men.	From section.
1	Prepare caps	4	8
2	Tackle and holdfasts	^a 12	4
3	Abutment and side rails	4	8
4	Prepare piles	4	8
5	Derrick	6	6
6	Frame builders	^b 10	5
7	Bark and frame carriers	12	2
8	Floor and pile carriers	11	7
9	Floor layers	5	6
10	Drive piles with mauls	2	7
11	Mark and saw piles	5	3
12	Augers and sledges	5	7
13	Boat crew and braces	5	7

^a Three parties of 4 each.^b Two parties of 5 each.

INSTRUCTIONS FOR WORKING PARTIES.

1. Cap section (4 men, eighth section). Prepare trestle caps.

Tools: One crosscut saw, 1 ax, 1 adze, 1 cant hook, 2 scratch awls, 1 chalk line, 2 augers (4-inch), 1 measuring rod (15 feet marked on face at center and at intervals of 3 feet 2 inches from center, and on edge, at center and at intervals of 2 feet 8 inches), 1 rule (2 feet), 1 level, 1 hammer, nails 8d, 1 square.

Lay cap on skids and chock. Saw to length of 15 feet. Across ends near top and bottom draw horizontal lines to determine required thickness, 6 inches, or tack on short 6-inch boards. Snap the chalk line horizontally to determine top cutting lines. Flatten down to these lines with ax and adze. Roll the cap over and flatten other side in same manner. The cap will now be of uniform thickness and flat on top and bottom. On center line of top bore 4-inch holes vertically at center and, at intervals of 3 feet, 2 inches from center. Mark with chalk on top, cross lines at 2 feet 8-inch intervals from center, for bark.

2. Tackle section (12 men, fourth section, 3 parties, 4 each). Four will rig and man upstream backstay, 4 rig and man downstream backstay, and 4 rig and man forestay across the stream. Each party rigs its own tackle and sets holdfasts. The backstay holdfasts are set 8 feet on either side of axis of bridge and 30 feet back from the abutment sill; each holdfast is a 4-inch by 5-foot stake driven 3 feet in ground and tied back to second stake. Rig a strap of 4-inch rope to hook tackle into. Reave double tackle of 4-inch rope 300 feet long in 6-inch blocks, and hook to holdfast and backstay. Backstay is 200 feet of 1-inch rope doubled, or 100 feet

of $\frac{1}{4}$ -inch rope, with large eye at end. When a frame is in place, put bight or eye of backstay over end of cap and stand by to take strain when frame is heaved over; then when derrick is set, lower away to place. Stand by to raise and lower as required. For the forestay a similar holdfast is set across the stream, in axis of bridge, 50 feet from water. Rig tackle of 300 feet of $\frac{1}{4}$ -inch rope in double and single 6-inch blocks, and hook to strap ($\frac{1}{4}$ -inch) on holdfast and to forestay, which is a 1-inch line leading across stream to cap of frame. When frame is adjusted, heave it over and stand by to haul it out in place when piles are bored. Each of these three parties will require 1 ax, 1 maul, 1 crowbar, and blocks and ropes as specified. The forestay party will lay the abutment sill on their side. (See abutment section.)

3. Abutment and side rails (4 men, eighth section).

Tools: One pick, 2 shovels, 2 mauls, 1 level, 1 square, lashings and rack sticks, range stakes. (P) Range out axis of bridge.

Dig trench perpendicular to axis of bridge and extending 8 feet each side thereof, 18 inches wide, 9 inches deep, bottom level. Lay abutment sill (a cap not bored) in trench; level and square. Stake with eight 3-inch by 4-foot stakes, four in front and four in rear of sill. Backfill with earth and tamp hard.

As soon as a bay of the bridge is completely floored, lay side rails (3 inches by 16 feet), placing them symmetrically over the outer barks; lash near caps of trestles to include 2 barks and 2 side rails where they lap and at middle of bark. Lashings are of $\frac{1}{4}$ -inch rope 18 feet long with eye-splice in one end. Take at least three turns and tighten with rack stick.

4. Preparing piles (4 men, eighth section).

Tools: One crosscut saw, 2 axes, 1 adz, 1 tape, 2 cant hooks, 1 drawing knifer. Sharpen the butt ends of piles to a conical point 1 foot long. Get depth of water for next bent from boat crew, and cut 5 piles for that bent to a length equal to the depth of water plus 11 feet.

5. Derrick section (6 men, sixth section).

Tools: Two hand saws, two sledges, spikes 6 inches, lashings, measuring rod or tape.

The foot of each leg must be finished off with jaws to embrace the cap of a trestle and revolve on it. Flatten the front and rear sides of the legs for 4 feet to good bearing surfaces. For each leg bevel to a flat surface two pieces 5 feet long and 5 in diameter, making the level 4 feet long. Spike these pieces to the flattened faces of the leg, letting them project 12 inches beyond it. Cut away the inside of these projecting ends so that their clear opening will be 9 inches.

Build frame as follows: Two legs, 12 feet 6 inches by 4 inches at top, laid parallel, 13 feet 8 inches between centers; spike and lash ($\frac{1}{4}$ -inch rope) a transom, $3\frac{1}{4}$ inches by 14 feet 8 inches across the legs, 6 inches from top; spike and lash ($\frac{1}{4}$ -inch rope) diagonals 3 inches by 16 feet from points near transom to points 6 feet below transom; lash ($\frac{1}{4}$ -inch rope) diagonals at crossing; square lashings; attach $\frac{1}{4}$ -inch lashings 12 feet long to transom near each leg.

When a balk frame has been set and heaved over, carry the derrick frame forward, legs in advance, and set jaws of legs over trestle cap. Lift the transom end to the backstays and lash with the $\frac{1}{4}$ -inch lashings. The derrick frame thus becomes a rocker arm for lowering the balk frame to place. Lay 5 planks from cap to cap as a temporary flooring of the new bay. When the barks of the new bay are laid, lash the 3 inner lines of balk to cap with 2 turns and frappings of $\frac{1}{4}$ -inch rope 28 feet long to hold them in place.

6. Frame builders (10 men, fifth section; 2 parties of 5 men each).

Tools for each party: One measuring rod 15 feet long, marked on face at center and at 6 feet 3 inch intervals each side of center, and on edge at center and at 4 feet 3 inch intervals each side of center; 4 augers, three-quarters of an inch; 4 sledges; $\frac{1}{4}$ -inch drift bolts 12 inches long; spikes 6 inches; tape; 1 cant hook; 2 crowbars; 1 maul; 1 hand saw; 1 square.

The first party (words in parentheses apply to second party). Lay two 6-inch by 15-foot skids on the ground, parallel with stream and 12 feet apart; bring the ends even, block them up to a level, and stake them fast. Mark points on each skid 5 feet 4 inches each way from center line and cut shallow notches about 3 inches wide. On these skids build the frames as follows: Lay 2 barks, butts (tops) toward the river, in notches on skids; cut to a length of 15 feet, but do not discard a bark 3 or 4 inches short; mark points on each bark 6 feet 3 inches from its center. Lay a cap, marked side down, over marks near tops (butts) of barks, shift the cap till its outer marks are even with the upstream (downstream) side of the barks; bore vertically and centrally through cap and balk at crossings, $\frac{1}{4}$ -inch holes, and drive 12-inch driftbolts. Bore holes vertically through balk

at the other 6-foot 3-inch marks. Spike on a ledger 3 inches by 13 feet across the barks at a distance of 4 feet 3 inches from centers of barks toward the butts (tops). Spike on a diagonal $3\frac{1}{2}$ inches by 15 feet from a point on the downstream (upstream) bark near ledger to a point on the upstream (downstream) bark near cap. The ends of ledger and diagonal should be slightly flattened and 2 spikes used in each end. Be sure that the distance between the upstream (downstream) sides of the 2 barks is exactly 10 feet 8 inches. If greater than this, trim off the upstream (downstream) bark; if less, trim off the downstream (upstream) bark at the ends for a distance of 3 feet.

Attach 5 lashings, $\frac{1}{2}$ -inch ropes 22 feet long with eye-splice in end, to cap at points 3 inches upstream from driftbolt holes. Pass each around the cap, reeve end through eye, haul taut in place, coil, and stop. Attach 2 lashings of 1-inch rope 25 feet long to the 2 barks just outside the driftbolt holes in the butts (tops) by throwing a clove hitch at the middle point of the lashing and slipping it over end of bark to proper place, leaving 2 free ends. When a frame is finished lay it to one side, without turning, and build another.

7. Bark and frame carriers (12 men, first section).

Get the first frame from the first party of frame builders, the second from the second party, third from first party, and so alternate. When a frame is called for, lay hold, facing the stream, as follows: Five men behind cap, 2 men in front of cap lifting barks, 3 men behind ledger, and 2 men at front ends of bark. Lift together and carry frame to its place on the bridge, lower the front end, and rest the ledger on the bark of the previous bay. A frame received from the first party of frame builders lies on the downstream side of the bark of the previous bay; one from the second party lies on the upstream side. Raise the rear end and slide forward to engage the bark under the cap of the previous bay. Fasten by upward and outward turn of lashings around cap. The middle cap carrier will disengage the forestay and fasten it to the new cap 6 inches from center by a round turn and 2 half hitches. The outer cap carrier will disengage the backstays and loop them over ends of new cap. Then, as the forestay is tightened and the backstay slacked off, lift the frame and help heave it over. Go ashore and lay out 3 barks ready for use.

If for filling a frame built by the first party, lay tops foremost; if for a frame of the second party, lay butts foremost. Get carrying bars $2\frac{1}{2}$ inches by 3 feet 6 inches, with a $\frac{1}{2}$ -inch lashing attached near center. Lay bars across the barks 3 feet from ends, pass lashings under, and stop with a few turns around bar. When barks are called for, lay hold, 4 men to each bark. The middle bark goes in advance, and is laid in place with proper lap. Its carriers disengage carrying bars and retire quickly. The other two barks follow abreast and are laid in place.

8. Floor and pile carriers (16 men of second and sixth sections).

Tools: Carrying bars.

As soon as the barks of a bay are laid and lashed the flooring is laid to the middle of the bay, and as soon as the planks are laid on a new frame the flooring is advanced to a point 1 inch from the cap.

When floors are called for, the floor carriers take from the pile each one pole or plank in right hand near the balance, front end raised, rear end trailing, and advance in single file, keeping to the right to the head of the bridge, where they swing the pole to the left and pass it to the floor layers, then retire quickly, keeping to the right, and bring another pole if needed. When poles are used they must be carried alternately butts and tops foremost, in order to lie heads and tails in the bridge. Each carrier will therefore note how his predecessor carries the pole and will reverse his own.

As pile carriers, this section is divided into 4 parties of 4 men each. As soon as a frame is lowered into place 2 piles will be called for. The first and second parties with carrying bars (see bark carriers) advance with 2 piles (second and fourth) abreast, pointed ends foremost, and lay them over the second and fourth driftbolt holes of the cap. Disengage the bars and launch the piles forward to balance on cap. The front carriers pass the lashings which they find on the cap over the pile, then down and out around the cap. One holds the lashing, while the other controls the pile. When the lashing is ready, the rear carriers launch the pile forward again and let go. It will now overbalance and swing to a vertical position under control of front carrier and lasher. When it is vertical, slack the lashing and let it drop to bottom. Adjust if necessary, and then fasten firmly to cap with square lashing. The carriers retire until the mauls have driven these 2 piles, when the third, fourth, and first parties advance with 3 piles, the first, third, and fifth, which are set in place in like manner as the second and fourth, except that the middle one (the third) goes first, and when it is dropped

the first and fifth are set. For the next pile bent the second and third parties carry the first 2 piles, and the fourth, first, and second parties carry the 3 piles, and so on by roster.

9. Floor layers (2 men of seventh section).

When flooring is called for, take station near last of flooring, one standing on first and second balks and the other on fourth and fifth balks, facing shore. Take poles or planks from the floor carriers, lay them on the balks, and jam them hard against the preceding piece, keeping the upstream ends even.

10. Maul section (5 men, third section).

Tools: Five mauls.

When the first 2 piles of a bent are set and lashed, 2 maul men drive them. The backstays are slacked off so that the weight of the frame and men assists in sinking the piles. When the 3 piles are set and the frame raised and lashed, the other 3 maul men drive them, assisted by weight of frame and men.

11. Saw section (5 men, third section).

Tools: Two measuring rods, cut to height of piles above water; 1 straightedge, 15 feet; 2 hammers; tenpenny nails; 5 handsaws.

When piles are driven the frame will be lowered by backstays to a height convenient for working on tops of piles. The saw section will then readjust lashings to hold piles in place and support weight. Numbers 1 and 5 with measuring rods mark height on first and fifth piles, and tack on the straightedge at this height. Saw the 5 piles at the height thus determined; knock off the straightedge and retire.

12. Augers and sledges (5 men, seventh section).

Tools: Five augers; 5 sledges; 4-inch drift bolts, 12 inches long.

As soon as piles are sawed off bore centrally in top of each pile a hole 6 inches deep. Take off the lashings. The frame will then be raised and advanced to final position by back and fore stays. Drive five 12-inch drift bolts through caps into piles.

13. Trestle braces and boat crew (5 men, seventh section).

Material: One pontoon with oars, boat hooks, painters, and lashings; braces 8½ inches by 15 feet; 2 hand axes; 1 sledge; spikes 6 inches; 1 sounding rod, 15 feet, marked to feet.

As soon as the position of one bent is determined, take soundings for next bent 12 feet 6 inches from last bent, and give soundings to pile section. As soon as a bent is completed by driftbolting, spike on 2 diagonal braces, from water surface to cap on one side and from cap to water on the other. Trim the piles and flatten the braces to a good bearing, and use 2 spikes in outer piles and 1 spike in interior piles.

Very respectfully,

THOS. H. REES.
Captain, Corps of Engineers, U. S. Army.

APPENDIX D.

DEPARTMENT OF LAW.

GENERAL SERVICE AND STAFF COLLEGE,
Fort Leavenworth, Kans., June 30, 1903.

The SECRETARY, GENERAL SERVICE AND STAFF COLLEGE,

Fort Leavenworth, Kans.

SIR: I have the honor to submit the following report on the workings of my department during the college year just closed:

By resolution of the college staff a period of eighty half days was assigned to the subject of law, this subject including military and international law, as also administration, and although, in my opinion, the time allotted was by no means sufficient, the course has been covered in a very satisfactory manner and the results obtained are considered excellent. As regards the great majority of the students, great interest has been displayed in the work; this interest not being confined to the immediate course, but, as shown by frequent and pertinent questions on matter foreign to the text, extending to matters bearing upon the subject. If, as recommended by the college staff in its late report, administration be omitted from the course for the next year, the good results obtained in this department may, I believe, be greatly increased.

Very respectfully,

H. M. ANDREWS,
Major, Artillery Corps, Instructor.

APPENDIX E.

DEPARTMENT OF MILITARY HYGIENE.

POST HOSPITAL, *Fort Leavenworth, Kans., July 8, 1903.*

THE SECRETARY, GENERAL SERVICE AND STAFF COLLEGE,

Fort Leavenworth, Kans.

SIR: In compliance with paragraph 63, College Regulations, I have the honor to submit the following recommendations regarding the course in military sanitation and hygiene at the General Service and Staff College:

Recent practical experience in war has brought to the attention of the people, and incidentally to the Army, the fact that three times as many soldiers die of disease as of wounds, and that the most formidable enemy we have to contend with is the invisible one made up of controllable diseases.

I say "controllable" advisedly, for when, in the war of 1898, our camps had been given over to typhoid fever, the people arose in their wrath and demanded that this enemy be driven out. It was, but not until after 2,565 men had died of disease, against 345 killed in battle. The Army had devoted its attention to the 345 and forgot the 2,565.

We are not singular in this respect. The history of every active army, save one, is the same, the remarkable exception being the German, of which, in the war of 1870, 33 per 1,000 fell in battle and but 18 died of disease. This nation learned its lesson four years before, in the war of 1866 with the Austrians, which lasted but six weeks and in which 6,427 Germans died of disease, against 4,450 of wounds.

Based upon recent military experiences, our very practical people realized that in at least one direction the education of our officers was woefully lacking, i. e., the preservation of the health of soldiers, and hence it is that military hygiene has been more or less grudgingly admitted to the curricula of two of our military schools—admitted not because the Army but the people demanded it.

That no great importance was attached to the course in this institution is shown by the fact that it was given the least weight in marks of any subject in the curriculum; that the programme outlined in the regulations is insignificant to a degree; that the present instructor was not assigned to duty until several months after the session began, and that his work as instructor is simply an episode of his office as surgeon of the largest post in the Army, the duties pertaining to which fully occupy his time and demand his entire attention.

In spite of this handicap it will be observed from the accompanying schedule that a fair attempt has been made to dignify the course and to teach the student officers that there really is something in the subject of military hygiene that military men should have knowledge of. I am happy to add that the examination indicates that real profit has been derived from the course, which justifies the hope that when the class of 1903, General Service and Staff College, reaches command rank the crimes of 1898 will not be repeated.

The foregoing remarks are offered to emphasize the necessity for a considerable knowledge on the part of line officers of the best methods of preserving the health of soldiers—not by curing them when ill, for that is the work of the physician, but of preventing illness, which is the very essence of military hygiene. Every sick man in a command is a palpable proof that the commander has failed by so much in obtaining an ideal result, and not until this fact is borne home to the mind of the line officer will that result follow. As I have frequently remarked, the line and the medical staff must have a more intimate knowledge of their mutual duties before a perfect fighting machine can be evolved.

I purpose that the course in military hygiene in this institution be placed on the same plane with the most favored branch, and that the same length of time be allotted for instruction therein.

If this is done, it must be quite evident that the instructor should be permitted to devote most of his time and thought to his work in the college, and that his relations to the post, if any, should be simply that of a medical inspector—in a word, that of chief surgeon of an independent command.

The details of the proposed course will be found in any work on hygiene, and might be outlined as follows (Munson):

1. The selection of the recruit.
2. The development of the recruit.
3. The march in campaign.
4. Water.

5. The ration.
6. Clothing and equipment.
7. Camp sites and camps.
8. Sanitary administration of camps.
9. Posts; barracks; quarters; hospitals.
10. Ventilation.
11. Heating and lighting.
12. Disposal of excreta, sewage, and refuse.
13. Personal cleanliness of the soldier.
14. Military morbidity and mortality.
15. Diseases of the soldier.
16. Disinfection.
17. Habits of the soldier as affecting his efficiency.
18. Hygiene of hot and cold climates.
19. Hygiene of the troopship.
20. Disposal of the dead.
21. Sanitary inspection of the military establishment, etc.

From the foregoing it will be observed that military hygiene is the foundation science in a military education. What boots it if an officer knows all else of the science of war, if he knows not how to care for the individual elements of the fighting machine, so that the apparatus can be brought into the fight effectively? This is the chief business of the line officer. The medical officer is here to advise him and to take care of his failures, the sick; but if there are any sick the line officer is responsible, and he should be taught to appreciate and meet that responsibility.

Respectfully submitted.

JOHN VAN R. HOFF,
Lieutenant-Colonel, Deputy Surgeon-General, U. S. Army,
Instructor in Military Hygiene.

APPENDIX TO REPORT OF INSTRUCTOR, DEPARTMENT OF MILITARY HYGIENE.

Programme of course in military hygiene, 1902-3.

Date (1903).	Recitation or lecture.	Subject.	Place of recitation or lecture.
May 5	Lecture	General consideration	Lecture hall.
6	do	Selection of soldiers	Do.
7	do	Physical training	Do.
8	Recitation	Text-book, pp. 1-7	Section rooms.
11	do	Text-book, pp. 7-20	Do.
12	Lecture	Military clothing	Lecture hall.
13	Recitation	Text-book, pp. 21-28	Section rooms.
14	do	Text-book, pp. 28-36	Do.
15	Lecture	Food	Lecture hall.
18	Recitation	Text-book, pp. 37-47	Section rooms.
19	do	Text-book, pp. 47-60	Do.
20	do	Text-book, pp. 70-71	Do.
21	Lecture	Habitations	Lecture hall.
22	Recitation	Text-book, pp. 70-80	Section rooms.
25	do	Text-book, pp. 80-96	Do.
26	Lecture	Camps	Lecture hall.
27	Recitation	Text-book, pp. 96-107	Section rooms.
28	Lecture	Disposal of wastes	Lecture hall.
29	Recitation	Text-book, pp. 108-119	Section rooms.
June 1	Lecture	Water	Lecture hall.
2	Recitation	Text-book, pp. 120-125	Section rooms.
3	do	Text-book, pp. 125-139	Do.
4	Lecture	Controllable diseases	Lecture hall.
5	Recitation	Text-book, pp. 140-146	Section rooms.
8	do	Text-book, pp. 147-171	Do.

REGULATIONS.

Lectures will be given and recitations heard between 11 a. m. and 12 m. on the dates and at the places above specified.

For lectures, the entire class will assemble in the lecture hall.

For recitation, the class will be divided into three sections, as follows:

First section: Beginning with Lieutenant Abbott and including Lieutenant Fitzpatrick, will report to Lieutenant-Colonel Hoff, deputy surgeon-general, in the lecture hall.

Second section: Beginning with Lieutenant Folwell and including Lieutenant Mitchell, will report to Captain Stone, assistant surgeon, in section room A.

Third section: Beginning with Lieutenant Morison and including Lieutenant Wilson, will report to Lieutenant Edwards, assistant surgeon, in section room B. The text-book for this course is Woodhull's Military Hygiene.

ORDERS }
No. 10. }

GENERAL SERVICE AND STAFF COLLEGE,
Fort Leavenworth, Kans., April 22, 1903.

Commencing Tuesday, May 5, 1903, the hours of recitation will be as follows:

Tactics: 9 to 10 a. m.

Tactics: 10 to 11 a. m.

Hygiene: 11 a. m. to 12 m.

II. For instruction in the subject of military hygiene only the class of student officers is divided into three sections, as follows:

First section.—Second Lieut. James E. Abbott, Twelfth Cavalry; First Lieut. Charles F. Andrews, Thirteenth Infantry; First Lieut. William A. Austin, Fourth Cavalry; First Lieut. Percy W. Arnold, First Cavalry; First Lieut. Leonard T. Baker, First Infantry; First Lieut. Walter T. Bates, Seventeenth Infantry; First Lieut. George N. Bomford, Fifth Infantry; First Lieut. Ewing E. Booth, Seventh Cavalry; First Lieut. Herbert J. Brees, Twelfth Cavalry; First Lieut. Allan L. Briggs, Fourteenth Infantry; First Lieut. Fred W. Bugbee, Twenty-fifth Infantry; First Lieut. Fred Bury, Twenty-third Infantry; Second Lieut. James S. Butler, First Cavalry; First Lieut. William A. Cavanaugh, Twentieth Infantry; First Lieut. DeWitt W. Chamberlin, Second Infantry; First Lieut. Percy M. Cochran, Seventh Infantry; Second Lieut. Edgar N. Coffey, Twelfth Cavalry; First Lieut. Patrick A. Connolly, Twenty-first Infantry; First Lieut. Bryan Conrad, Fifteenth Infantry; Second Lieut. George R. Crawford, Eleventh Infantry; First Lieut. Milo C. Corey, Thirtieth Infantry; First Lieut. Thomas B. Crockett, Twenty-fourth Infantry; Second Lieut. Eugene P. Crowne, Fourth Infantry; First Lieut. Frank R. Curtis, Thirteenth Infantry; First Lieut. Charles H. Danforth, Seventeenth Infantry; First Lieut. Fred L. Davidson, Seventh Infantry; Second Lieut. John A. Degen, Fourth Cavalry; Second Lieut. Auswell E. Deutsch, Fifth Infantry; First Lieut. John T. Dunn, Eleventh Infantry; Second Lieut. Henry M. Fales, Twenty-first Infantry; First Lieut. Arthur M. Ferguson, Fourteenth Infantry; Second Lieut. William C. Fitzpatrick, Seventh Infantry.

Second section.—First Lieut. William B. Folwell, First Infantry; Second Lieut. Granville R. Fortescue, Fourth Cavalry; First Lieut. Charles S. Frank, Seventeenth Infantry; First Lieut. John W. French, Nineteenth Infantry; First Lieut. William M. Goodale, Twenty-fifth Infantry; First Lieut. William B. Graham, Eighth Infantry; First Lieut. George M. Grimes, Twentieth Infantry; First Lieut. Robert E. Grinstead, Twenty-third Infantry; First Lieut. Charles S. Haight, Fourth Cavalry; First Lieut. Thomas R. Harker, Fifteenth Infantry; First Lieut. John P. Hasson, Fifth Cavalry; Second Lieut. William A. Haycraft, Twenty-second Infantry; First Lieut. John E. Hemphill, Tenth Cavalry; Second Lieut. Franklin P. Jackson, Twenty-ninth Infantry; Second Lieut. Douglas H. Jacobs, Fifth Cavalry; Second Lieut. Solomon L. Jeffers, Twelfth Cavalry; First Lieut. E. Alexis Jeunet, First Infantry; First Lieut. Gordon Johnston, Fifteenth Cavalry; First Lieut. Walter H. Johnson, Eighth Infantry; Second Lieut. C. Rodman Jones, First Cavalry; Second Lieut. Morris M. Keck, Twelfth Infantry; First Lieut. John M. Kelso, jr., Thirteenth Infantry; First Lieut. Thomas M. Knox, Fourth Cavalry; First Lieut. George E. Kumpe, Twenty-eighth Infantry; First Lieut. Franklin S. Leisenring, Fourth Infantry; First Lieut. DeWitt C. Lyles, Twentieth Infantry; Second Lieut. John F. McCarthy, Nineteenth Infantry; First Lieut. Donald C. McClelland, Tenth Infantry; First Lieut. Frank T. McNarney, Sixth Cavalry; First Lieut. Frederick W. Mills, jr., Seventh Infantry; Second Lieut. Harry D. Mitchell, Sixteenth Infantry.

Third section.—Second Lieut. Charles R. W. Morison, Fifth Infantry; Second Lieut. John C. Murphy, Eighth Infantry; First Lieut. Benjamin P. Nicklin, Ninth Infantry; First Lieut. Englebert G. Ovenshine, Sixteenth Infantry; First Lieut. Ward B. Pershing, Fourth Cavalry; First Lieut. James M. Petty, Twentieth Infantry; Second Lieut. Albert E. Phillips, Eighth Cavalry; Second Lieut. Arthur N. Pickel, Twelfth Cavalry; First Lieut. Rowland S. Pike, Eleventh Infantry; First Lieut. Joseph C. Richter, jr., Fourth Cavalry; First Lieut. Basil N. Rittenhouse, Eleventh Cavalry; First Lieut. John B. Schoeffel, Ninth Infantry;

First Lieut. Consuelo A. Seoane, Third Cavalry; First Lieut. Rudolph E. Smyser, Fourteenth Cavalry; First Lieut. David A. Snyder, Sixth Infantry; First Lieut. Cromwell Stacey, Thirtieth Infantry; First Lieut. Jens E. Stedje, Fourth Cavalry; First Lieut. William R. Taylor, Third Cavalry; Second Lieut. Henry S. Terrell, Eighth Cavalry; First Lieut. William M. True, Twenty-eighth Infantry; First Lieut. Alvin C. Voris, Eighth Infantry; First Lieut. Robert R. Wallach, Third Cavalry; First Lieut. Rush S. Wells, Eighth Cavalry; First Lieut. Solomon B. West, Eighteenth Infantry; First Lieut. Kaolin L. Whitson, Ninth Infantry; First Lieut. Frank D. Wickham, Twelfth Infantry; First Lieut. John F. Wilkinson, Sixth Infantry; First Lieut. Albert S. Williams, Fifth Infantry; First Lieut. George Williams, Eighth Cavalry; First Lieut. Gideon H. Williams, Twenty-eighth Infantry; Second Lieut. Joseph C. Wilson, Sixth Infantry.

III. For recitations, the first section will assemble in the lecture room, the second section in section room A, and the third section in section room B.

By order of Colonel Miner, commandant:

L. M. KOEHLER,
Captain, Fourth Cavalry, Secretary.

**REPORT OF THE COMMANDANT OF THE SCHOOL
OF APPLICATION FOR CAVALRY AND
FIELD ARTILLERY.**

REPORT OF BRIG. GEN. CAMILLO C. C. CARR, U. S. ARMY, COMMANDANT SCHOOL OF APPLICATION FOR CAVALRY AND FIELD ARTILLERY.

SCHOOL OF APPLICATION FOR CAVALRY
AND FIELD ARTILLERY,
Fort Riley, Kans., September 12, 1903.

The ADJUTANT-GENERAL, UNITED STATES ARMY,
Washington, D. C.

SIR: In accordance with paragraph 9, Regulations for the School of Application for Cavalry and Field Artillery, I have the honor to submit for the information of the Lieutenant-General Commanding the Army the following report of the progress and wants of the school for the year ending August 31, 1903:

Financial report for the fiscal year ending June 30, 1903.

RECEIPTS.

From Treasurer of the United States	\$1,118.00
From sale of duplicate library book .....	.75
Covered into Treasury to balance overdraft	1.00
Total receipts	1,119.75

DISBURSEMENTS.

Printing office (type, paper, cardboard, ink, etc.)	\$125.57
Magazines (23 subscriptions, scientific, military, and literary periodicals)	96.17
Freight and express (charges paid on commercial shipments other than books)	2.58
Books (157 professional, reference, scientific, historical, etc.)	333.83
School supplies, including blackboards, class memorandum books, stationery, etc	213.99
Extra-duty pay, school printer	97.86
Returned to Treasury on account of Tabard Inn Library subscription, disallowed by Auditor for War Department	150.00
Returned to Treasury on account of expenditures properly belonging to appropriation, 1901-2	99.75
Total disbursements	1,119.75

My recommendation of last year for a separate building especially adapted to the needs of the school, to be devoted exclusively to its use for the purposes therein mentioned, is earnestly renewed. The capacity of the library room is not sufficient for the needs of the school, and additional book stacks and shelving should be provided, many of the books being now stored elsewhere for want of sufficient shelf space.

The theoretical and practical instruction of the hospital detachment under Maj. Paul Shillock, Medical Department, U. S. Army, has been satisfactory.

Attention is respectfully invited to the detailed reports of the directors of the cavalry and artillery subschools attached hereto and marked "A" and "B," respectively, which are approved and their recommendations concurred in.

The recommendation of the director of the cavalry subschool for 50 additional copies of Army Regulations for use in the school is concurred in. The books are absolutely necessary, and enlisted men should not be expected to obtain them themselves.

Attention is again especially invited to the necessity of keeping the organizations at the school filled to their maximum strength, prescribed in orders, of officers, men, and horses, as otherwise it is not possible to obtain the best results or fully accomplish the work for which the school was established. The opportunities for practical work at this post, on account of the large reservation and the varied nature of the ground, can not be fully taken advantage of, owing to the reduced size of the organizations, due to the great number of men being discharged and the fact that recruits to fill these vacancies are not promptly supplied. Many officers are detailed away at the service schools and elsewhere, and others placed on special duty, thus taking them from their organizations, and leaving generally but one officer with an organization. This prevents the accomplishment of the work desired. It is therefore recommended that when officers are detailed away others be transferred here to take their places, and that the officers necessary to conduct the department competitions and those detailed on duty pertaining to the work in connection with the fall maneuvers be sent here from other posts, this post supplying only its pro rata share for these duties. This year it was necessary to leave some organizations without a commanding officer in order to comply with demands for details of officers in connection with the department competitions. The post should be left as nearly free as possible during these periods, so that the school can properly carry out its programme of instruction without interruption. To remedy the evils resulting from a scarcity of officers, it is recommended that every officer assigned to the cavalry arm be sent here for at least one year's instruction, where he would have opportunities to learn the practical part of his profession not obtainable elsewhere.

SCHOOL FOR FARRIERS AND HORSESHOERS.

The school for farriers and horseshoers, established by General Orders, No. 2, current series, this school, dated January 17, 1903 (see Appendix C), has been in operation since January 19, 1903, and has been an entire success. The first class, consisting of 40 members, was graduated May 5, 1903. Reports from regiments to which these men belonged and to which they were returned after finishing their course at the school indicate that their instruction here has been of great benefit to them, and that their work since has been much more satisfactory than ever before and has resulted in a great progress in the methods of caring for sick and injured animals and in the proper shoeing of horses.

The instruction of the second class of 48 members began on June 1, 1903, instruction ending September 30, 1903, and on account of the

great number of applications from the different organizations to send more men here it was necessary to establish another class of 45 members, to start on August 1, instruction ending November 30, 1903. This increased number taxed the facilities of the school to the utmost, and it was necessary to construct temporary blacksmith shops and to quarter the men in the new cavalry barracks quarters, which are intended for the school for farriers and horseshoers, constructing but not yet completed. Workshops are in contemplation, but have not yet been authorized, as should be done.

The system of instruction in the school has been thoroughly established, and several pamphlets, specially adapted to its use, have been printed by the printing office of the school. The text-book which has been prepared for the use of the farriers is now in the Government Printing Office, and it is hoped that it will be ready for the use of the class beginning January 1, 1904. The methods of instruction used in the school are excellent, and the interest in the work is constantly increasing, due to the earnest efforts of the director, Capt. W. C. Short, Thirteenth Cavalry, and Veterinarians Plummer and Power, the instructors. The schedule of instruction is published in Special Orders, No. 2, current series, this school, dated January 19, 1903. (Appendix D.)

On account of the difficulty of obtaining specially instructed men for the different troops, and taking into consideration the value of the instruction imparted in this school, it is recommended that farriers and horseshoers holding certificates of proficiency from this school should be allowed an increase of pay, rank, or some other suitable inducement for them to reenlist. The knowledge that they acquire in the school makes them valuable men in the Army, and would increase the probability of their obtaining a good position in civil life, thus decreasing the probability of their reenlistment unless some such inducement is offered them.

SCHOOL FOR TRUMPETERS, MESSENGERS, AND ORDERLIES.

The school for trumpeters, messengers, and orderlies, established February 7, 1903, pursuant to authority from the Adjutant-General of the Army, under date of January 14, 1903, as per Special Orders, No. 4, current series, this school (Appendix E), has been in progress since February 9, 1903, for instruction of trumpeters of the cavalry command, and has given excellent results. The course of instruction for trumpeters, messengers, and orderlies is outlined in Special Orders No. 5, current series, school, dated February 9, 1903. (Appendix F.)

SCHOOL FOR COOKS AND BAKERS.

A plan for the establishment of a school for cooks and bakers, somewhat on the lines of the school for farriers and horseshoers, to which men detailed from the different organizations of the mounted service, who have at least two years to serve or are certain to reenlist, can be sent for practical instruction, was forwarded, approved, on July 21, 1903. It was thought that its establishment would be of great benefit to the service and in harmony with the general plan of the school of application. The difficulty of obtaining properly instructed cooks and bakers is a matter of general complaint, and the establishment of such a school would supply to a certain and very appreciable

extent the demand for this class of men. The bakery recently constructed will afford excellent facilities for this kind of instruction.

PIONEER DETACHMENT.

A pioneer detachment was established, pursuant to instructions from the Adjutant-General's Office, Washington, D. C., under date of June 6, 1903, and a detail under command of Lieut. W. A. McCain, Eighth Cavalry, sent to Fort Leavenworth, Kans., for special instruction, as indicated in that authority. The progress of the detachment thus far has been rather slow, on account of the lack of proper equipment, but it has been employed in the construction of hasty intrenchments, raft building, in studying the employment of explosives, making demolitions, etc., so as to be able to instruct others in the same subjects when the proper tools and equipments are received.

PRINTING OFFICE.

The value of the printing office material and the importance of the work done in that office make it imperative that some inducement be given the present incumbent, Julius Carstensen, Sixth Battery, Field Artillery, to remain in the office. It is recommended that he be placed on the civil list, for which he has already qualified. His enlistment expires March 20, 1904, and unless some such inducement is given him to remain in the office it is probable that the school will lose a valuable man and the work of the post be hampered by inefficient handling of a large amount of work done in the office on account of the great difficulty in obtaining enlisted men who are sufficiently proficient and careful in this kind of work.

CAVALRY FIELD OFFICERS AND NONCOMMISSIONED OFFICERS' STABLES.

The recommendation in my last report for the building of a stable for the use of the cavalry field officers and the noncommissioned staff is renewed, as an evident necessity.

POST GYMNASIUM AND EXCHANGE.

The conversion of the old general mess hall into a post gymnasium and exchange is now well under way. As it has been decided to add a swimming pool to the gymnasium, the men of the command will have an opportunity to learn the art of swimming, without which no soldier's education should be considered complete.

A table showing the buildings which have been completed since last report, those under construction, with approximate dates set for their completion, and buildings in contemplation will be found in Appendix G.

The execution of the prescribed programme for practical work, especially exercises involving the combined operations of cavalry and field artillery, was somewhat interfered with by the maneuvers of last September-October, but to the advantage of both arms.

The manner in which they performed the duties prescribed for them in the maneuvers reflected great credit upon them, and was an indis-

putable proof that their instruction and training had been developed along proper lines and to the best advantage.

After the establishment of the post school January 10, 1903, in compliance with General Orders 102, dated War Department, Washington, September 22, 1902, all field exercises practically ceased because both officers and selected enlisted men were compelled to attend the different recitations daily, except Saturdays and Sundays. This was very unfortunate, because the post school, which was not opened at the time originally intended, took up a great deal of the time which might have been most profitably employed in the combined field exercises of cavalry and field artillery under unusually favorable weather conditions.

In conclusion, I desire to express my warm appreciation of the zeal and energy displayed by the officers and enlisted men of the command in the performance of their prescribed duties, and to commend them for their exemplary discipline and their general good conduct, social as well as official.

Very respectfully,

C. C. C. CARR,
Brigadier-General, U. S. Army, Commandant.

[Appendices C, D, E, and F not printed.]

APPENDIX A.

CAVALRY SUBPOST,
Fort Riley, Kans., August 20, 1903.

The SECRETARY, CAVALRY AND FIELD ARTILLERY SCHOOL,

Fort Riley, Kans.

SIR: Pursuant to requirements of paragraph 17, General Orders, No. 60, Adjutant-General's Office, series 1901, I have the honor to render the following report concerning the cavalry subschool for the year ending August 20, 1903.

In compliance with Special Orders, No. 129, headquarters Department of the Missouri, dated July 14, 1902, I reported from leave of absence August 12, 1902; and on the following day, by virtue of rank, assumed command of the cavalry subschool, relieving Maj. Alexander Rodgers, Fourth Cavalry, who, as it was within a few days of the date for the rendition of the annual report, made his to date August 12, 1902.

The command consisted at that time of the First Squadron, Fourth Cavalry, and Third Squadron, Eighth Cavalry. (See Appendix A.)

During the remainder of August the schedule of drills established earlier in the season was continued. (See Appendix B, General Orders, No. 7.)

The squadron of the Eighth Cavalry being practically dismounted, there being but 79 horses for the four troops, the horses were consolidated for the use of at least one troop to properly prosecute troop drill. (See Appendix C.) This did not interfere with the use of the horses for the instruction of recruits, of whom there was a separate detachment under First Lieut. C. M. Wesson, Eighth Cavalry.

Subsequently the First Squadron, Fourth Cavalry, continued its drill and instruction in minor tactics, with satisfactory results, and when, later in September, Camp Root and the maneuvers were established on the military reservation, Fort Riley, the squadron was well prepared for its duties.

Attention is invited to appendices giving examples of problems solved in minor tactics.

In preparation for the maneuvers above referred to it was determined that the squadron, Fourth Cavalry, would participate without going into camp, and that the squadron, Eighth Cavalry, owing to its dismounted condition, would remain and care for the post. On September 17 Troop K, Eighth Cavalry, was detached

and assigned to duty at the headquarters, maneuver division, Camp Root. Late in September 93 horses were turned over by the Quartermaster's Department to the Third Squadron, Eighth Cavalry, but which became available as their mount only on the expiration of the fall maneuvers, which terminated October 10. Training of these horses was at once begun, and drills for the Fourth Cavalry squadron, interrupted by the field maneuvers, resumed. (See Appendix D.)

For drills and instruction held during November, December, and April, see Appendices E, F, and L, and for the use of the riding hall during inclement weather, see Appendices E, G, H, I, and J.

Recitations in officers' school began January 12, pursuant to General Orders, No. 49, headquarters, Fort Riley, dated December 21, 1902, and held daily, Saturdays, Sundays, and holidays excepted, till close of the scholastic year, April 30, 1903. Recitations held from 10 a. m. to 12 m.

Marked interest and industry were shown generally by all officers concerned. At termination of the school term written examinations were had in the subjects completed in the first year, and the results showed generally an extremely good knowledge of the work accomplished. All student officers were found proficient in administration, drill regulations, guard duty, and small-arms firing regulations. Reports with certificates of examination in each subject were duly forwarded to the commanding officer, Fort Riley.

In March aiming and sighting drill and gallery practice were commenced, in compliance with instructions from headquarters Department of the Missouri, preparatory to the regular target practice, which included the months of May, June, and July, extended (twice) to include August 28 on account of interruptions due to the extensive floods in May and June and the combined pistol and carbine competitions of the Department of Missouri and Texas, occurring August 4 to 15. (See Appendix K.) During the target season practice was permitted to interfere as little as possible with regular drills, and instruction and drills in the school of the troop and squadron were had. (See Appendix M.)

Concerning the instruction of noncommissioned officers and selected privates, complying with General Orders 60, Adjutant-General's Office, 1901, attention is invited to Appendix O. Recitations were had regularly and as constant attendance of pupils was had as far as practicable, all of which were duly reported weekly to the secretary of the Cavalry and Field Artillery School. The progress was good, and the pupils showed industry, intelligence, and marked interest in the subjects studied and recited in.

It is recommended that an increase in Army Regulations be issued for the individual use of students in administration, as the number of books was not adequate to the demand and many men had little or no opportunity to study before recitations. Fifty copies belonging to and issued for use by the subschool would not be more than sufficient to fill requirements.

The method of instruction by lectures by Veterinarian Plummer, Fourth Cavalry, in his teaching the classes in hippology was most excellent, and the benefit derived was as great as its importance, which can not be overestimated for the instruction of a cavalryman.

The benefit derived from instruction at the school for trumpeters, messengers, and orderlies (post) was manifest in the men detailed from this command. The same remarks apply to the great benefits derived from attendance by the blacksmiths, farriers, and selected men of the command at the (post) school for farriers and horseshoers. Great interest and desire to attend the latter have been shown by the enlisted men and more applicants have solicited permission to take the course than was contemplated on the regular details for pupils from this command.

The instruction of recruits has been during this year most satisfactorily maintained. Since November last Capt. W. C. Short, Thirteenth Cavalry, has had complete charge of all cavalry recruits arriving at this post. The course of instruction is the same as that heretofore established. The benefit of Captain Short's instruction and the permanency of the detail of instructor has been demonstrated.

Attention is invited to Appendix P, showing the number of recruits received and instructed.

Progress in signal drill, begun July 1 and still continued (see Appendix N), has not been satisfactory as desired on account of the frequent detachment of officers for other duties and their necessary absence from drills and practice, all due to the scarcity of commissioned officers on duty with troops. Second Lieutenants Barney and Cowles, Fourth Cavalry, and McCain and Mueller, Eighth Cavalry, were the officers detailed, each of whom, excepting Lieutenant Barney, absent on leave, has had to perform, subsequently to commencement of signaling, such

duties as to preclude their attendance. The enlisted men have done better. None have, however, been pronounced proficient by Lieutenant Otis, signal officer.

Very respectfully,

C. A. STEDMAN,
Lieutenant-Colonel Fourth Cavalry,
Director of the Subschool.

[Appendices not printed.]

APPENDIX B.

THE SUBSCHOOL OF ARTILLERY,
Fort Riley, Kans., August 1, 1903.

THE SECRETARY, CAVALRY AND FIELD ARTILLERY SCHOOL,
Fort Riley, Kans.

SIR: In compliance with paragraph 24, General Orders, No. 60, Adjutant-General's Office, series 1901, I have the honor to submit the following report regarding the progress and wants of this school for the period December 1, 1902, to August 1, 1903.

Pursuant to Special Order No. 255, Adjutant-General's Office, series 1902, I arrived at this post November 30, 1902, and assumed command of the artillery subpost and duties of the director of the subschool of artillery.

DRILL AND INSTRUCTION.

The field batteries, from the date of my predecessor's (Col. G. B. Rodney, Artillery Corps) last report, August 20, 1902, up to the time of my arrival, had been following a scheme of drill and instruction prepared by him. This was continued by me during the month of December, when the batteries were engaged in target practice, which had been intercepted somewhat by the maneuvers in September and October, mounted drills when the weather permitted, horse exercise, and calisthenics.

During the months of January, February, March, and April (school months) horse exercise, special instruction of gunners, and a few mounted drills or road exercise were had when time would permit and officers were available.

In May the gunners' examination took place, and this, with the rains and floods, interfered materially with the work and little was accomplished, other than keeping the horses in good condition.

In June, school of the battery, preparation for action, fire direction, elementary target practice, and revolver practice.

The first part of this month was also unsatisfactory to some extent on account of the rains and floods, and the elementary target practice could not be completed. This practice, completed in July, was as follows:

(a) *For accuracy.*—Firing at each of two known distances, about 2,000 and 3,000 yards. Target: The standard, 20 by 10. One sighting shot allowed each gunner at each range. Allowance of ammunition: 36 shell (percussion).

(b) *To range and find length of fuse.*—Both stationary and moving targets will be used and problems involving the use of auxiliary aiming points and indirect fire employed. No change of target until correctly ranged and three effective shrapnel, with same length of fuse, obtained. When this is the case, the battery commander will cease firing and call upon the range party for effect of this fire. Ranges from 2,000 to 4,000 yards. Allowances of ammunition, 54 shell and 108 shrapnel.

(c) *For effect with ammunition limit.*—A series at about 3,000 yards, after range is adjusted. Allowance of ammunition, 24 shrapnel and about 4 shell for adjusting the range.

(d) *For effect with time limit.*—A series beyond 2,000 yards, with six minutes' time. Allowance of ammunition, 4 shell and 24 shrapnel.

In July, school of the battery: preparation for action; fire direction; target practice, elementary (completed) and battery service; signal drill; castrametation and marches; each battery making two marches of over 15 miles each.

In the battery service practice the following problems were executed by each battery:

PROBLEM I.

FIRST PERIOD.

Battery to take position near the eastern boundary of the reservation, facing west.

Target: 3 standard targets in echelon, 50 yards apart.

Distance: About 5,000 yards.

Ammunition allowance: 12 shell, twelve minutes from first fire.

SECOND PERIOD.

From position indicated battery commander will send out ground scouts to determine best crossing of broken ground in his front. Battery commander will then advance directly toward target, and as soon as ground permits will be formed in line and take up rapid gait, advancing to second position, about 3,000 yards from a second target, to be indicated.

Target: Dummy battery and 18 infantry silhouettes.

Distance: About 3,000 yards. Time-series fire: Fifteen minutes from action.

Ammunition allowance: 6 shell, 18 shrapnel.

Time for advancing to second position: Forty-five minutes.

THIRD PERIOD.

Battery will advance in the direction indicated and go into action against infantry deployed as skirmishers at about 1,500 yards.

Target: Infantry silhouettes as skirmishers.

Distance: About 1,500 yards.

Ammunition allowance: 18 shrapnel.

Time for advancing to third position and third period: Eighteen minutes.

Time from first fire to end of third period: One hour and thirty minutes.

PROBLEM II.

FIRST PERIOD.

To range and fire shrapnel at a battery of artillery protected on flanks by skirmishers in trenches

Target: Dummy battery and infantry silhouettes.

Distance: About 3,500 yards.

Ammunition allowance: 30 shrapnel.

SECOND PERIOD.

To change position to repel infantry advancing on another part of the field. Extent of the movement about a mile at a trot. Time allowance from limbering up in first position to end of last series of shots: twenty-five minutes.

Ammunition allowance: 18 shrapnel.

Range: 1,500 to 2,000 yards.

PROBLEM III.

To gallop (at rate of 12 miles per hour) to three positions, about one-half mile apart, firing 12 shrapnel from each of the three positions at a corresponding target. All of the targets approximately parallel to the line of the battery march.

Time limit for series: one hour.

Ammunition allowance: 36 shrapnel.

Range: 1,600 to 3,500 yards.

Targets: first target, standard; second, column of fours, deploying; third, skirmishers.

The target practice, both elementary and battery service, was very satisfactory, and gave evidence of intelligent instruction and thorough training of the batteries by the captains.

OFFICERS' SCHOOL.

Under letter of instructions from the War Department, dated November 11, 1902, this school opened January 10, 1903, and was continued daily, Saturdays and Sundays excepted, until April 30, 1903, the end of the term.

The schedule was published in General Orders 48, Fort Riley, Kans., December 11, 1902, modified by General Orders, Nos. 3 and II, 1903, Fort Riley, Kans.; Special Orders 53, 1903, Fort Riley, Kans., and General Orders, No. 21, Adjutant-General's Office, 1903, was carried out as follows:

	Number of recitations.	Instructor.
Administration.....	38	Major Coffin.
Drill regulations.....	25	Captain Adams.
Coast artillery.....	7	Captain Lassiter.
Guard duty.....	6	Captain March.
Small-arms firing regulations.....	18	Captains Adams and Lassiter.
Minor tactics.....	8	Captain March.
Military law.....	7	Captain Snow.
Field engineering.....	10	Captain March.
Military topography.....	16	Captain Snow.
International law.....	11	Do.
Power devices.....	4	Captain Lassiter.

Recitations were of one hour's duration each, from 10 to 11 a. m. and from 11 a. m. to 12 m.

General Orders, No. 21, Adjutant-General's Office, current series, was not received at this post until March 8, 1903, too late to carry out all its provisions, and there remain uncompleted in the first term the following:

	Recitations.
Troops in campaign.....	6
Minor tactics.....	8
Military law.....	13
International law.....	19
Drill regulations, coast artillery.....	9
Power devices.....	6

It is possible that these may be completed in the second term next year.

Every effort was made to accomplish as much as possible, but the order came too late.

The completed courses are administration, guard duty, small-arms firing regulations, field engineering, military topography, and drill regulations (field artillery).

Written examinations were held in these subjects, as directed by General Orders, No. 31, Fort Riley, Kans., 1903, and as follows:

- May 7. Administration.
- May 8. Drill regulations (field artillery).
- May 9. Guard duty.
- May 11. Small-arms firing regulations.
- May 12. Field engineering.
- May 13. Military topography.

One officer of the board was present in the room during the examinations.

The papers were examined and marked, and percentage in each subject determined; also the average.

The following records in connection with the course and examinations are herewith appended and marked:

"A." Term marks.....	1903
"B." Practical course.....	1903
"C." Examination.....	1903
"D." Average of term, practical and examination.....	1903

These records show very clearly that the officers undergoing instruction were diligent and attentive to their duty, their daily recitations showing that they were prepared with much care and intelligence.

The "Certificates of proficiency," signed by the members of the board, as required by General Orders, No. 102, Adjutant-General's Office, series 1902, were forwarded to your office on the 28th instant.

SCHOOL FOR NONCOMMISSIONED OFFICERS AND SELECTED PRIVATES.

Under General Orders, No. 60, Adjutant-General's Office, series 1901, and General Orders, No. 1, Cavalry and Field Artillery School, Fort Riley, Kans., January 2,

1903, this school was opened January 12, 1903, and continued daily, Saturdays and Sundays excepted, until April 30, 1903, the end of the term.

The schedule as published in General Orders, No. 1, current series, Cavalry and Field Artillery School, was carried out as follows:

	Hours.
Manual of guard duty	2
Drill regulations	10
Army regulations	3
Hippology	15
Horseshoeing	5
Draft and draft animals	6
Construction of temporary bridges	5
Construction of fieldworks	5
Reconnaissance, etc	6
Use of sights	22
Construction of shell, shrapnel, and fuses	
Range finders	
Firing practice with subcaliber device	

The instruction was by battery, each captain being the instructor in his own battery, assisted by his lieutenants, to whom were assigned subjects varying in the different batteries according to their needs.

The names of the noncommissioned officers and selected privates who were declared proficient in the various subjects were reported to your office under date of July 7, 1903, which report shows the good work done by them and the excellent instruction imparted by the captains and lieutenants.

REMARKS AND RECOMMENDATIONS.

I. My time was so occupied that I did not have the opportunity to visit the different sections as often as I had desired and had intended.

I think it would be advisable and in the best interest of the school if the directors had no sections, as it would enable them to personally superintend all instruction more thoroughly than they were able to do this year.

The preparation of subjects, the hearing of the recitations, and correction of papers afterwards take a great deal of time and leave very little for what I consider more important for the school.

Both directors have many post duties, and the boards (cavalry and field artillery) are very exacting. I therefore recommend that the directors superintend and have no special sections.

II. I do not think the marking system a good one. It necessarily exists at the national academies, where standing determines one's rank in the service, but it is rarely found in the larger institutions of learning.

There does not seem to me to be anything gained by such a system here, especially in a short course, where relative standing, even though determined with the greatest care, can be but a rough estimate of relative ability and by no means a just one.

The simple declaration of proficient or deficient would meet with all requirements, and after a thorough examination on all subjects could be pronounced with absolute justice.

I therefore recommend that there be no daily marking on recitations and no relative standing.

III. In connection with the "second-term" course, as prescribed in General Orders, No. 21, Adjutant-General's Office, series 1903, I must state that it will be very difficult to accomplish in a place like this.

A detailed study of all service guns and carriages from pamphlet and plates alone, without the guns and carriages themselves, also of meteorological instruments, without the instruments themselves, is a problem which will be almost impossible to solve.

The same applies to depression position finders, telautographs, dynamos, and seacoast engineering.

There are no facilities here for giving instruction in the above subjects which would in any way be satisfactory, and it is recommended that the necessary action be taken with a view of providing a limited theoretical course, having special reference to the field-artillery arm, for lieutenants of field artillery serving at this post.

This is one of the "service schools" established by General Orders, No. 155, Adjutant-General's Office, series 1901, and is designated as the "School of Appli-

cation for Cavalry and Field Artillery." It would therefore seem that a special course should obtain, as at other service schools.

IV. It is recommended by all battery commanders that in any theoretical instruction of enlisted men the number of recitations required be not more than three in each week. Owing to their other necessary duties, noncommissioned officers in the field-artillery service do not have time at their disposal to prepare properly for a daily recitation without encroaching so much upon their limited recreation hours as to render the duty irksome, and they soon lose their interest. I strongly recommend that the number of recitations be reduced, as above.

V. I am of the opinion that General Orders, No. 60, Adjutant-General's Office, series 1901, should be revised, as conditions have changed since it was issued. I therefore recommend its revision.

VI. The enlisted strength of the field batteries is not sufficient. One hundred and twenty men is the minimum number that the battery can get along with, provided all are present for duty.

The strength of the batteries for efficient work and service should be 160 men, and I strongly recommend that number.

VII. An increase in the number of horses allowed each battery is also recommended. One hundred and nine horses are actually required and only 100 are allowed.

In the contemplated change of the battery to 4 guns and 12 caissons, 133 horses will be required.

Each battery should be allowed at present 120 horses.

Very respectfully,

WM. H. COFFIN,
Major, Field Artillery, Director Artillery Subschool.

APPENDIX G.

A table showing the buildings which have been completed since last report, those under construction, with approximate dates set for their completion, and buildings in contemplation.

BUILDINGS COMPLETED SINCE LAST REPORT.

August 31, 1902, to August 31, 1903.

- No. 84. Additions to cavalry barracks for kitchen and dining room.
- No. 85. Altered from double to single cavalry barracks.
- No. 86. Altered from double to single cavalry barracks.
- No. 88. Altered from double to single cavalry barracks.
- No. 89. Altered from double to single cavalry barracks.
- No. 40. Addition to cavalry barracks for kitchen and dining room.
- No. 42. Cavalry stable.
- No. 46. Cavalry stable.
- No. 81. Gun shed.
- No. 83. Gun shed.
- No. 88. Artillery stable.
- No. 144. Double cavalry barracks. Now occupied.

UNDER CONSTRUCTION.

- No. 4. Field officers' quarters; to be completed December 30, 1903.
- No. 5. Field officers' quarters; to be completed December 30, 1903.
- No. 18. Double set officers' quarters; to be completed September 30, 1903.
- No. 87. Bakery building; to be completed October 1, 1903.
- No. 43. Cavalry stable guard building.
- No. 47. Cavalry stable guard building.
- No. 48. Cavalry stable; to be completed January 15, 1904.
- No. 50. Cavalry stable; to be completed September 15, 1904.
- No. 51. Cavalry stable guard building.
- No. 52. Cavalry stable; to be completed September 15, 1904.
- No. 54. Cavalry stable; to be completed September 15, 1904.
- No. 55. Cavalry stable guard building.

- No. 56. Cavalry stable; to be completed September 15, 1904.
- No. 89. Addition for reading room and library.
- No. 90. Artillery barracks.
- Nos. 91 and 93. Addition and alteration, providing amusement room and rooms for noncommissioned officers; alterations, increasing size of dormitories.
- No. 99. Double set officers' quarters.
- No. 101. Field officers' quarters.
- No. 103. Double set officers' quarters.
- No. 118. Double set noncommissioned staff officers' quarters.
- No. 122. Double set noncommissioned staff officers' quarters.
- No. 145. Bachelor officers' quarters and mess.
- No. 146. Double cavalry barracks.
- No. 147. Gun shed.
- No. 148. Artillery stables.
- No. 149. Double cavalry barracks, for farriers' school; to be completed September —, 1904.
- No. 150. Artillery workshop.
- No. 151. Artillery workshop.
- No. 152. Artillery workshop.
- No. 153. Artillery workshop.

Thirty-two separate buildings were altered and provided with separate heating plants to take the place of the general heating plant discontinued.

Electric-lighting system for all buildings in the post, contract let and commencement made, but electric light will not be furnished until about April, 1904.

IN CONTEMPLATION.

Main guardhouse, cavalry-band barracks, horseshoeing shops for farriers' school, veterinary hospital.

**REPORT OF THE COMMANDANT OF THE
ARTILLERY SCHOOL.**

REPORT OF COL. JOHN P. STORY, ARTILLERY CORPS, COMMANDANT ARTILLERY SCHOOL.

ARTILLERY SCHOOL,
Fort Monroe, Va., September 1, 1903.

The ADJUTANT-GENERAL OF THE ARMY,
Washington, D. C.

GENERAL: I have the honor to submit the following report on the Artillery School for the year which ended August 31, 1903:

The work of the school during the year has been conducted in accordance with the orders, regulations, and special instructions governing it, and the progress made has been very satisfactory, the student officers generally evincing proper interest in the instruction given. The instructors have been zealous and efficient in the performance of their duties. During the period covered by this report instruction was given in the subjects prescribed by General Orders, No. 109, Adjutant-General's Office, August 15, 1901, namely: Ballistics, seacoast engineering, electricity, mines, mechanism, artillery, coast defense, chemistry, and explosives. A statement showing more in detail the character of the instruction in each department follows:

The warm interest shown by the Chief of Artillery in the Artillery School and his unfailing support of the recommendations of the school staff have contributed greatly to its efficiency.

SYNOPSIS OF THE COURSE OF STUDY IN THE DEPARTMENT OF BALLISTICS AND SEACOAST ENGINEERING.

Instructor, Capt. Frank S. Harlow, Artillery Corps.

Assistant instructor, Capt. Percy P. Bishop, Artillery Corps.

Sixty school days are allotted to this department.

This time is assigned to subjects as follows: Ballistics, fifty-two days; seacoast engineering, eight days.

I. BALLISTICS.

(a) *Exterior ballistics.*—Gunnery definitions, ballistic coefficient; coefficient of form; values to be employed in absence of experiment; resistance of air to the motion of oblong projectiles; empirical formulas for same; ballistic formulas and tables, their construction and use.

1. *Direct fire.*—General formulas for same. Auxiliary tables. Jump. Numerical solution of all important problems involving range, time of flight, muzzle velocity, angle of elevation, angle of departure, angle of fall, striking velocity, coefficient of form, striking energy, perforation of armor, drift, effect of head, rear, and cross wind. Correction for altitude; principle of rigidity of trajectory; plotting tra-

jectories; determination of danger spaces; velocity of rotation of rifle projectiles. Probability of fire; calculations of 50 per cent zones and probable rectangles. Method of computing a general range table; effect of variation of different elements; preparation of battery commander's and gun commander's tables. Shrapnel range tables.

2. *Curved fire*.—Formulas and tables for low velocity firing; application to curved fire and numerical solution of important problems in same.

3. *High angle fire*.—Formulas and tables for same. Euler's and Ingalls's methods. Numerical solution of problems.

(b) *Ballistic machines*.—Boulengé chronograph. Practical work in measuring muzzle velocities and jump. Setting up and adjusting apparatus.

(c) *Interior ballistics*.—Inflammation and combustion of grains and charges of powder. Comparison of curves of pressure of fine-grained and coarse-grained powders; of quick and slow powders. Gravimetric density; density of loading; initial air space. Combustion of grains of different forms. Velocity and pressure at any point in bore of a gun; construction of velocity and pressure curves. Amount of powder burned in gun. Characteristics of powder. Maximum pressure on projectile. Maximum pressure on breech. Sarrau's binomial and monomial formulas. Formulas for smokeless powder.

II. SEACOAST ENGINEERING.

Laying out and accurately measuring a base with steel tapes. Corrections for sag, stretch, temperature, and level. Determination of azimuths of lines by observations of Polaris. Execution of a triangulation for determination of harbor base lines. Adjustment of the triangles. Orientation and graduation of gun and mortar circles. Leveling. Principles of hydrographic surveying.

A list of the text and reference books used in the course of instruction in this department follows:

Issued from the Artillery School library for temporary use by student officers—
 Artillery Circulars M and N.
 Logarithmic Tables.
 Ingalls' Interior Ballistics.
 Ingalls' Ballistic Machines.
 Note on Seacoast Engineering.

SYNOPSIS OF THE COURSE OF STUDY IN THE DEPARTMENT OF ARTILLERY, COAST DEFENSE, CHEMISTRY, AND EXPLOSIVES.

Instructor, Capt. Erasmus M. Weaver, Artillery Corps.

Assistant instructor, Capt. Percy P. Bishop, Artillery Corps, relieved by Assistant Instructor Capt. John D. Barrette, Artillery Corps.

Eighty days are allotted to this department.

This time is assigned to subjects as follows: Artillery, forty days; chemistry, eight days; explosives, twelve days; coast defense, twenty days.

Each school day is divided into two periods, one devoted to theoretical instruction in the class room of three hours duration, and one of from two to three hours duration to practical exercises in the laboratory or out of doors.

ARTILLERY.

Theoretical.—Guns and carriages; projectiles, fuses, powder, and primers; sights, quadrants, position finders, plotting and relocating devices; fire control and direction; armor and warships.

Practical.—Inspection of artillery material; mechanical maneuvers; use of crusher gauge; use of star gauge; taking impressions of the bores of cannon; care and use of the hydraulic jack; visit to some gun factory; practical work in fire direction at the guns; artillery practice with seacoast guns and mortars at moving targets.

CHEMISTRY.

Theoretical.—Laws of fixed proportions and multiples; atomic theory; chemical notation and nomenclature; chemical reactions; radicals; bases; acids and salts; equivalent and atomic weights; volume relations of gases; valency; problems in weights and volumes.

Practical.—Experiments in laboratory illustrating the principles involved in the theoretical portion of the course.

EXPLOSIVES.

Theoretical.—Substances used in the manufacture of explosives; propelling explosives; disruptive explosives; fulminates and frictional explosives; storage and transportation of explosives.

Practical.—Stability and other service tests; field experiments in demolitions; visit to some powder factory.

COAST DEFENSE.

Theoretical.—Considerations influencing the determination of the number and kinds of guns and mortars and torpedoes required for coast defense; considerations influencing the location of coast batteries and submarine defenses; classification of coast-defense material; organization of the coast-defense personnel; relation of the Navy to coast defense; modes of naval attack on coasts; principles of coast defense against the several modes of naval attack.

Practical.—The coast-defense war game.

COURSE OF LECTURES BY SPECIALISTS.

During the course, as a part of it, and in connection with the subjects under consideration at the time, a course of lectures is delivered to the class by specialists. The subjects for the year 1902–3 were as follows:

1. "Stability tests of explosives." By Mr. Albert P. Sy, chemist, Frankford Arsenal laboratory.
2. "Smokeless powder." By Mr. H. F. Brown, general superintendent of the International Powder Company.
3. "Seacoast ordnance; recent improvements in gun construction; the power of modern ordnance in attacking war ships." By Maj. Rogers Birnie, Ordnance Department, U. S. Army.
4. "Seacoast carriages; means for obtaining quick fire with large guns and mortars." By Capt. Charles B. Wheeler, Ordnance Department, U. S. Army.
5. "Projectiles, fuses, powder, and primers." By Capt. B. W. Dunn, Ordnance Department, U. S. Army.
6. "Armor: Kinds; characteristics, resistance, and attack of coast projectiles under normal and oblique impact." By Lieut. Cleland Davis, U. S. Navy.

A list of the text and reference books used in the course of instruction in this department follows:

To be purchased by the student officer:

Descriptive General Chemistry. Tillman.

The Manufacture of Explosives. Guttman.

Ordnance and Gunnery. Bruff.

All the World's Fighting Ships. (This is an annual publication, and each student officer is required to have a copy of the latest edition.) Jane.

The Tactics of Coast Defense. Wisser.

Issued:

Artillery Notes. To be furnished by the student officer.

Instruction pamphlets, issued by the Ordnance Department, on guns, carriages, projectiles, fuses, powder, primers, sights, position finders, etc.

SYNOPSIS OF THE COURSE OF STUDY IN THE DEPARTMENT OF ELECTRICITY, MINES, AND MECHANISM.

Instructor, Capt. Henry C. Davis, Artillery Corps.

Assistant instructor, William P. Pence, Artillery Corps.

Ninety school days are allotted to this department.

This time is assigned to subjects as follows: Mechanism, thirty days; electricity, forty-five days; mines, fifteen days.

The time allotted for each day is divided between recitations and discussions and practical work with the instruments and machines. It is hoped that by continually handling and running the apparatus familiarity will be acquired in addition to the necessary knowledge. Observation indicates that the former is as important as the latter in the instruction of student officers, enabling them more easily to master the practical problems at their posts.

I. MECHANISM.

1. *Mechanics*.—Relation between energy, force, and path, and the units involved. Representation of force, path, velocity, and energy by geometrical magnitudes; their composition and resolution. Simple laws of fluid pressures.

Practical: Working problems involving the principles applied in engines and other machines and apparatus used in the service.

2. *Machines*.—Theory of simple machines and their application to the transmission of power and motion.

Practical: Problems illustrative of the subject; manipulation of such simple machines and models as are available.

3. *Boilers and engines*.—(a) Boilers: Types of boilers used in the service, with necessary and other accessories; their action in use; principles of stoking, etc.; the hammer and other tests.

Practical: Observation of firing; operating injector and other accessories, testing steam gauges, and applying hydraulic test to boilers.

(b) Steam engines: Study of the general characteristics of single-expansion slide-valve steam engines of the service types; action and use of the piston, crosshead, fly wheel, throttling governor, and eccentric; principles of the wheel governor from diagram and engine; of the slide valve from Zeuner's diagram modified and from a model; of lubrication, as to kind of oil for different parts and method of application; in making, I. H. P., B. H. P., and steam-consumption tests, and in reading and working up indicator cards; in starting up, running, and stopping.

Practical: Running, caring for, stopping, seeing to lubrication; setting the slide valve for symmetry and lead on the model and then on the engine; taking indicator cards and discussing valve setting as thereby indicated; calculating I. H. P. graphically and with the planimeter from the indicator cards taken; preparing apparatus and making B. H. P. tests; calculating steam consumption from indicator card and then determining the three efficiencies; reversing the model and then the engine.

(c) Oil engines: Study of principles and methods involved in the operation of oil engines, especially of those used in the service and as illustrated by the two and four cycle types on hand; the setting up and use of the accessories.

Practical: Starting, running, and stopping the engines; caring for same; testing for "troubles;" making tests for O. H. P., I. H. P., and B. H. P., and calculating the efficiencies.

The practical work in this course is continued incidentally in those following it.

II. ELECTRICITY.

1. *Theory of currents.*—Study of manifestation and flow, electric circuits, electric units, and their relation. The magnetic field and its relation to direction and strength of current.

2. *Measurement of currents.*—Principles of the galvanometer and bridge; of testing sets; of voltmeter; of ammeter, shunt, and series; of wattmeter, ohmmeter, and voltmeter.

Practical: Using these instruments continually. Attention is devoted wholly to service tests and measurements, lack of time forbidding delicate laboratory work.

3. *Production of currents chemically.*—Principles of primary cells and their combination into groups.

Practical: Setting up, maintaining, and testing such types as are furnished to the service, and testing them for adaptability to open and closed circuit work.

4. *Production of current mechanically.*—Elementary theory and description of generators of different types; magnetic circuit; relation of field, rotation, and E. M. F.; characteristic curve; testing accessories.

Practical: Connecting up machines as series, shunt, or compound and in parallel and running them; adjusting voltage and load and distributing load among those in parallel; noting necessity for equalizer; run for heat and capacity tests; taking characteristic curve; measuring resistance of armature and field by "drop" and by bridge; making other service tests.

5. *Uses of current with—*(a) Motor: Elementary theory; similarity to and difference from generators; motor accessories.

Practical: Running generators as motors and the reverse; applying necessary accessories; regulating motor speed, two methods; testing, together with generator, for combined efficiencies.

(b) Telautographs: Study of theory and the details of circuits, interior and exterior.

Practical: Installing, adjusting, and operating. (Instruments received too late this year.)

(c) Telephones: Study of theory, details of circuit, care, and tests.

Practical: Installing telephones, as series or bridge (after determining the type), at three stations, with and without a central, and operating the system; inspecting for and locating faults.

(d) Telephoto: Operating it.

(e) Telegraph: Study of instruments and circuits.

Practical: Establishing in the laboratory three stations, complete. (No attempt to instruct in operation.)

(f) Bells: Principles involved.

Practical: Installing bells in series, parallel, and in various combinations and altering from vibrating to single stroke and the reverse.

(g) Arc lights: Study of the feed mechanism of the C. C. and the C. P. from the lamps.

(h) Incandescent lamps: Study of distribution on the two and three wire systems.

Practical: Installing lamps, fusing and wiring sockets, rosettes, plugs, etc.; measurement of current required at different voltages to give a specified c. p.

(i) Searchlights: Study of the details from the light itself, running it, and regulating the feed and voltage.

(j) Laflin and Rand exploder: Study of the details from the machine, using it, and testing its capacity to fire fuses in series and in parallel.

(k) Fuses: Measuring the resistance and the firing current of one and calculating voltage and current necessary to fire several in parallel or series.

6. *Storage of electrical energy.*—Study of the theory of the storage battery. Methods of preparing the plates in service types. Tests and management.

Practical: Setting up and charging a storage battery; making tests of voltage and electrolyte; discharging and putting out of and in commission; inspection for sulphate or other defects and measuring internal resistance; determining normal current of a battery by size and number of the plates; making capacity and efficiency tests.

7. *The switch board.*—Its use and instruments on it.

Practical: Operating, preparing, and setting overload and underload switches, circuit breakers, fuses, rheostats, etc.; tracing circuits on the board.

III. MINES.

Recitation and discussion on torpedo manual.—Practical: Each officer to identify by sight all the material for (a) casemate, (b) loading room, (c) boat service. Familiarization with the switch board, its accessories, and instruments on it, including their uses, batteries, operating box, and instruments and circuits for testing table; tests of circuit regulators, fuses, disconnecter, and operating box; making daily tests; making connections and joints and assembling all parts necessary for planting a grand group of mines.

The system was laid out on the floor of a long shed, with a mine suspended so as to receive a motion similar to that when struck.

It is hoped that the visit to this post of the tug from Fort Totten may take place during the time allotted to this work in the school year 1903-4.

PROBLEMS.

Many details and principles are brought out in these which are taken in connection with the practical work.

SEARCHLIGHTS.

The searchlights obtained last school year from different sources have been turned over to the post and installed as a part of the fortifications.

They may be used by the class for advanced work, but, owing to their distance from the school building and the number of officers to be instructed, it is not practicable to use them for that purpose during the preliminary stages.

There is needed a small light, 24-inch, fitted with the latest hand and distant control. This set in a tower in the school building would give much-needed facilities.

A list of the text and reference books used in the course of instruction in this department follows:

Issued from the Artillery School library for temporary use by student officers:

Notes on Steam Engine. Homer.
 Elements of Mechanism. Homer.
 Engine and Engine Running. Rose.
 Practice and Theory of the Injector. Kneass.
 Oil Engines. Goldingham.
 Storage Battery Engineering. Lynton.
 Lessons in Practical Electricity. Swoope.
 Dynamo Electric Machinery. Thompson.
 Diagrams of Electrical Connections. Thompson.
 Practical Management of Dynamo and Motor. Crocker-Wheeler.
 Dynamo Tender's Handbook. Badt.
 The A B C of Wireless Telegraphy. Trevert.
 Manual No. 1. U. S. S. C.
 Manual No. 3. U. S. S. C.

Issued from the library department of electricity, mines, and mechanism for temporary use by student officers:

Catalogue, Ashcroft Manufacturing Company.
 Catalogue, Crosby Steam Gauge and Valve Company.
 Pamphlet, Lubrication in Textile Mills.
 Pamphlet, Oil Engines, Generators, and Storage Batteries.
 Pamphlet, Mechanics.
 Professional Notes, No. 27.
 Handbook for the use of Electricians. Anderson.
 Catalogue, General Electric Company on Standard Fuses.
 Catalogue, General Electric Company, Electric Supplies.
 Catalogue No. 10, Weston Electrical Instrument Company.
 Instructions on Weston Voltmeters. U. S. S. C.
 Instruction Book, Thompson Recording Wattmeter.
 Manual of Wiring. Cushing.
 Instruction Book No. 8189, Searchlights, General Electric Company.
 Bulletins, General Electric Company.
 Catalogue, Electric Storage Battery Company.
 Catalogue, Ward Leonard & Co.

Issued from the office of the commanding officer, Fort Monroe, Va., for temporary use by student officers:

Torpedo Manual. U. S. E. C.

To be furnished by the student officer:

All Artillery Notes.

MASTER GUNNER'S CLASS.

For the school year just ended a gunnery specialist class (hereafter to be called the master gunner's class), which originally consisted of 21 members, selected after examination from the enlisted men of the artillery, was for the first time established at Fort Monroe, Va. This class, however, is not a part of the Artillery School.

The following programme of instruction was adopted:

Algebra, to include quadratic equations, plane geometry, plane trigonometry, surveying with special reference to artillery work, elements of optics, mechanical right-line drawing, instruction in the adjustment, care, and use of all angle-measuring instruments used in coast artillery, the construction of difference charts and charts for plotting

boards, the use of range tables and range scales, instruction in photography and making of blueprints.

The course of study was continued for about eight months.

The following hours of daily study and recitation (Saturdays and Sundays excepted) were observed: 8 a. m. to 11.30 a. m.; 1.30 p. m. to 4 p. m.; 7 p. m. to 9 p. m.

Many of the more studious men devoted more time to study than would be indicated by the hours prescribed.

The scope and extent of the instruction will be shown by the examination questions at the completion of the various subjects, which will be found in Appendix A.

The high standard of proficiency required is indicated by the fact that only 9 out of original class of 21 members received a diploma of graduation.

Their names follow: Franklin Overheiser, sergeant, One hundred and ninth Company; Ballard E. Weeb, quartermaster-sergeant, Sixth Company; Frank J. Forbing, sergeant, One hundred and second Company; John R. Leister, sergeant, Seventy-ninth Company; Percy A. Castle, sergeant, One hundred and seventh Company; George D. Meece, sergeant, Twenty-eighth Company; Oliver Smith, sergeant, Sixtieth Company; Benjamin H. Hiett, sergeant, Thirtieth Company; John Granz, private, Sixth Company.

Six graduates of the class in charge of First Lieut. T. H. Koch, Artillery Corps, went July 1 to the army and navy maneuver district in Portland Harbor, Maine, and were employed in the preparation of charts and kindred work. The esteem in which their services were held is shown by letters received from Maj. W. P. Duvall, Maj. W. B. Homer, and Capt. J. M. Williams, all of the Artillery Corps.

As Major Homer had the closest opportunity to observe these men, his letter will be quoted:

FORT PREBLE, ME., *August 15, 1903.*

MY DEAR CAPTAIN: I desire to express my appreciation of the work by members of your gunnery specialist class on duty here. I have observed their work daily since July 29, and have been surprised at its excellence. It has been a matter of wonder that in one year's instruction they can do the class of work they are doing in photography and chart making. They have proved invaluable during this preparatory stage, and I don't see how the work could have been completed without them. Few officers in my acquaintance have the same skill and facility as draftsmen as has been shown by these men.

I congratulate you on your success. Early and late Lieutenant Koch and his men have been at work, most of the time poorly provided with material and implements, but they have been most faithful and industrious, and I have seen them working till 10 o'clock at night doing all in their power to provide the charts and plotting boards necessary for the work. They have turned out a vast quantity of beautiful and accurate work that reflects great credit on themselves, Lieutenant Koch, and your school.

Faithfully, yours,

W. B. HOMER,

Major, Artillery Corps, Commanding Post.

Capt. IRA A. HAYNES, *Artillery Corps.*

The amount of work performed by this party at Portland is published in Appendix B. For the excellent results obtained from the instruction of these men credit is due to Capt. Ira A. Haynes, Artillery

Corps, instructor, and First Lieut. T. H. Koch, Artillery Corps, assistant instructor.

Graduates of the master gunners' class have been taken for nearly one year from their companies to receive instruction to qualify them for the highest standard of work required of the artillery soldier. There should be not less than three master gunners in each company of coast artillery.

The following summary will give a good idea of the work they are qualified to execute and which should be performed under the supervision of the artillery district engineer officer:

Surveying and triangulation to determine the length and azimuth of horizontal base lines.

Orienting guns and determining the height of gun trunnions and position finders above mean low tide.

Construction of various harbor charts for use by the district, fort, fire, and battery commanders.

Construction of plotting boards.

Construction of topographical maps of the country and coast of the artillery district with a view of providing proper defense against landing parties and land attacks on the forts.

Computations, photography, and blue prints.

Experience has shown that it is impossible to keep men of such attainments in the coast artillery for the pay given to men in the companies.

Legislation should be asked to provide for graduates of the master gunners' class sufficient rank and pay to induce them to remain in the service.

For such purpose the following legislation is recommended:

AN ACT to increase the efficiency of the Coast Artillery, United States Army.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after the approval of this act any enlisted man of whatever grade of the Coast Artillery, United States Army, who holds a certificate of proficiency in the course of instruction for qualification as a master gunner, prescribed or to be prescribed by the Secretary of War, shall receive fifteen dollars per month in addition to the pay of his grade and length of service: *Provided*, That no company of Coast Artillery shall have more than three master gunners: *Provided*, That the benefit of the certificate of master gunner shall be forfeited if the holder thereof be out of the Coast Artillery Service for more than three months: *Provided further*, That any enlisted man of the Coast Artillery holding such certificate at the date of his retirement shall be retired with the pay and allowance of his grade, inclusive of his additional pay as master gunner.

ARTILLERY SCHOOL LIBRARY.

The additions to the library during the year have been limited to such books on military subjects as have been purchased from the school appropriation or have been furnished from the War Department, the other Government departments, and a few other sources. The library has been used constantly by the student officers in their studies and investigations and by others who are accorded the privilege.

The library now contains on its shelves 12,905 volumes, 12,035 pamphlets, and 1,650 maps. During the year 347 volumes, 257 pamphlets, and 268 topographical sheets of the maps of the United States Geological Survey have been added to it.

The library also has the benefit of the exchanges of the Journal of the United States Artillery, which is printed on the Artillery School press. These exchanges comprise 146 foreign and domestic period-

icals. Collectively these offer to the student officer the current professional thought of the world on military and other scientific subjects. It is estimated that the annual value of these exchanges amounts to over \$500.

The back volumes of these periodicals are bound at the school bindery and the bound volumes are then entered in the catalogue of the library.

In this way, year by year, a very complete collection of military and modern technical artillery literature is being made which is of great value to all artillery officers.

Attention is invited to the great danger from fire to which it is exposed. The building now used is an ordinary frame structure, 60 by 35 feet, heated by stoves and lighted by electricity. It is walled and ceiled on the interior with yellow pine boards, very pitchy. A fire starting from any cause would instantly spread over this pitchy surface and make it impossible to save any considerable portion of the library.

The capacity of the building is far too small and the building itself entirely unsuited to the requirements the library should fulfill in its relation to the school. A large number of books and pamphlets have been stored in an old ordnance stable, thus rendering them comparatively inaccessible.

In the library itself the shelves are practically all filled, so that the insertion of new books in their proper places in the scheme of classification is very difficult and sometimes impossible without complete rearrangement of the whole section.

It would seem that the library, with its large amount of useful reference material properly classified and well arranged, so as to be readily accessible, should form an important feature of the school. But this is possible only in a new building suitably planned to answer the needs of a modern library.

It will be seen, therefore, that a new library building of larger capacity and fireproof in its construction is most urgently needed. This building should be of such capacity as not only to contain the present library, but also to allow for future additions at the rate of about 1,000 volumes a year.

In view of the special character of this library and its importance to the artillery service, it is urgently recommended that its proper housing receive immediate attention. It is most necessary that its condition be brought to a high standard and maintained there.

"The library is the principle of life of every institution of instruction, whose tone can never rise higher than the means for teaching its instructors."

CLERICAL INCREASE NEEDED.

In 1894 a civilian clerk was appointed to the Artillery School. At that time the clerical work of the school was well within the capacity of a competent man, but as the classes of the school were enlarged, and after the organization of the artillery board at the school, the work increased beyond the capacity of one man, however competent he might be. Fortunately there has been at the post Ordnance Sergt. Thomas V. Turney, a very competent clerk of long experience, employed for many years in the adjutant's office, who was at times available for school work. Ordnance Sergeant Turney, however, was retired about August 21, 1903, and since then the school has been com-

pelled to resort to different makeshifts to complete its clerical work. The expedient of detailing enlisted men has been faithfully tried for years, but with the exception of Ordnance Sergeant Turney has proven unsatisfactory. These men tire of the detail on account of the exacting nature of the work, and either apply to be relieved, or are appointed noncommissioned officers.

It is within my knowledge that the civilian clerk, Mr. Keller, and Ordnance Sergeant Turney have habitually worked beyond office hours in the day and frequently worked late at night in order to keep the work of the school finished up to date. Mr. Keller is also at his desk on Sunday.

The clerk of the Artillery School keeps the records of the artillery board, the Artillery School board, and all disbursements for the Artillery School, including the disbursements for the printing office and bookbindery and Artillery Notes. He has charge of all the correspondence relating to the school and to student officers and the master gunners' class.

The increase of the clerical work in recent years can be best illustrated as follows:

Letters received in the eight months from—

January 1, 1901, to September 1, 1901.....	220
January 1, 1902, to September 1, 1902.....	493
January 1, 1903, to September 1, 1903.....	888

An increase since 1901 of 400 per cent.

Letters sent from disbursing office for the same period: 1901, 396; 1902, 412; 1903, 1,080, an increase since 1901 of more than 200 per cent.

The written pages in the Artillery School board book for the same periods are 74, 137, and 267, respectively, an increase since 1901 of over 300 per cent. The period of eight months was taken to show how great has been the increase of work this year up to September 1, the date of this report.

The present class of student officers consists of 27 members, the largest ever here. Fifty officers have been ordered to report in the next class, which will involve a further increase of clerical work in the records of the Artillery School.

It is urgently recommended, for the reasons here given, that an additional clerk of the classified service, who shall be a stenographer and typewriter, be allowed the Artillery School, and that the salary of \$1,200 for an additional clerk be included in the estimate for the fiscal year 1905.

The General Service and Staff College, with a class of 96 officers, has 3 civil-service clerks and finds this number unequal to the school work.

REMARKS.

The class of student officers numbered this year 27, of whom 20 members were proficient in all the courses and will receive the diplomas of the Artillery School. The following list gives the graduates arranged according to lineal rank in the artillery:

Capt. Robert H. C. Kelton, Artillery Corps.
 Capt. Winfred B. Carr, Artillery Corps.
 Capt. Henry J. Hatch, Artillery Corps.
 First Lieut. James F. Howell, Artillery Corps.
 First Lieut. John C. Goodfellow, Artillery Corps.

First Lieut. Morrell M. Mills, Artillery Corps.
First Lieut. Charles R. Lloyd, jr., Artillery Corps.
First Lieut. Edward Carpenter, Artillery Corps.
First Lieut. Oliver L. Spaulding, jr., Artillery Corps.
First Lieut. Conrad H. Lanza, Artillery Corps.
First Lieut. LeVert Coleman, Artillery Corps.
First Lieut. Jesse C. Nicholls, Artillery Corps.

First Lieut. Fred H. Gallup, Artillery Corps.
First Lieut. Clifton C. Carter, Artillery Corps.
First Lieut. Francis F. Cooke, Artillery Corps.
First Lieut. Stanley D. Embick, Artillery Corps.
First Lieut. Robert F. McMillan, Artillery Corps.
First Lieut. Godwin Ordway, Artillery Corps.
First Lieut. Charles E. Kilbourne, jr., Artillery Corps.
First Lieut. William H. Monroe, Artillery Corps.

Experience has shown that there are officers who receive the course of instruction at the Artillery School, who study zealously, and yet are unable to reach the standard of proficiency which will entitle them to a diploma of graduation. Some of these officers have shown considerable aptitude and efficiency in a practical direction for the artillery service and will with further study probably be able to pass successfully their examinations for promotion, and prove their merit.

While it is not desirable to lower the standard of proficiency of the Artillery School in order that such officers may graduate, yet they deserve favorable consideration. However, there are other officers who, from lack of capacity, or with sufficient capacity, from disinclination to study, take so low a stand at this school that it is evident they will never be qualified in the technical requirements of the artillery service.

It is recommended that Congress be requested to pass the legislation necessary to eliminate from the Army artillery officers who, after a course of instruction at the Artillery School, have demonstrated their unfitness for the artillery service.

JOHN P. STORY,
Colonel, Artillery Corps, Commandant.

APPENDIX A.

EXAMINATION IN MASTER GUNNER'S CLASS

ALGEBRA.

1. Add: $a+b-2c$, $8a+4c+2b$, $3c-2a-6b$, $2b-2c$, $3a$
2. Simplify: $\frac{7x-10}{5} - \frac{3x-7}{6} - \frac{27x-30}{30}$
3. Simplify: $3a - \frac{1}{2} [b + \{2a - (b-x)\}]$
4. Reduce to simplest form $\frac{a^2+ab+b^2}{a^2-ab+b^2} \times \frac{a^3+b^3}{a^3-b^3}$
5. Resolve into the simplest factors: ax^2-a ; x^4-81a^4 ; $8a^3+27$; $x^2+7x+10$
6. Solve: $2a(3a-x) - 3x(2b-a) = ab$
7. Find the square root of: $9a^4-12a^3b+34a^2b^2-20ab^3+25b^4$
8. Solve: $\begin{cases} 3x-2y=5 \\ 4x-3y+2z=11 \\ x-2y-5z=-7 \end{cases}$
9. Multiply: $x^2-(a-b)x-ab$ by $x^2+(a-b)x-ab$
10. Divide: $\frac{(a^{\frac{1}{2}}b^{\frac{1}{2}})^3}{\sqrt[3]{c^2}}$ by $\frac{\sqrt[5]{c^2b^5}}{\sqrt[5]{a^7}}$
11. Bracket together the equivalent expressions in the following list:
 $a^{\frac{1}{2}}$, a^2 , $a^{\frac{1}{4}}$, a^{-3} , \sqrt{a} , $\sqrt{a^4}$, $a^{\frac{1}{2}}\sqrt[5]{a^3}$, $\frac{a^4}{a^7}$, $a^3 \times a^{-1}$,
12. Solve: $\frac{x+m-2n}{x+m+2n} = \frac{n+2m-2x}{n-2m+2x}$
13. Solve: $a+x+\sqrt{2ax+x^2}=b$
14. Find the cube root of: $x^6+1-6x-6x^5+15x^2-15x^4-20x^3$
15. Simplify: $\left(\frac{3^2 2 a^{-10} x^{-1\frac{1}{2}}}{6^{\frac{1}{2}} y^{\frac{1}{2}}}\right)^{-\frac{1}{2}}$

GEOMETRY.

1. *Theorem*.—If two sides of a triangle are unequal, the angles opposite are unequal, and the greater angle is opposite the greater side.
2. *Problem*.—Upon a given straight line, to describe a segment of a circle in which a given angle may be inscribed.
3. *Theorem*.—If in a right triangle a perpendicular is drawn from the vertex of the right angle to the hypotenuse.
 - (a) The triangles thus formed are similar to the given triangle and to each other.
 - (b) The perpendicular is the mean proportional between the segments of the hypotenuse.
 - (c) Each leg of the right triangle is the mean proportional between the hypotenuse and its adjacent segments.
4. *Problem*.—To construct a parallelogram equivalent to a given square, and having the difference of its base altitude equal to a given line.
5. *Theorem*.—Of all isoperimetric triangles having the same base the isosceles triangle is the maximum.

TRIGONOMETRY.

1. A vertical tower stands on a declivity inclined 15 degrees to the horizon. A man ascends the declivity 80 feet from the base of the tower, and finds the angle then subtended by the tower to be 30 degrees. Find the height of the tower.
2. A regular pyramid, with a square base, has a lateral edge 150 feet in length, and the length of a side of its base is 200 feet. Find the inclination of the face of the pyramid to the base.
3. Compute the difference between the perimeters of a regular pentagon and a regular hexagon if the area of each is equal to 12.
4. Wishing to know the breadth of a river from A to B, I take A C 100 yards in the prolongation of B A, and then take C D, 200 yards at right angles to A C. The angle B D A is $37^\circ 18' 30''$. Find A B.

SEACOAST ENGINEERING AND METEOROLOGICAL INSTRUMENTS.

1. Explain in detail the measurement of a horizontal line with a steel tape, enumerating the corrections to be made, and explaining how data for these corrections are obtained.
2. Explain in detail how the true azimuth of a line is determined by stellar observations.
3. Explain how a pintle center may be located after base ring has been set, carriage and gun not mounted, and how center of motion of gun after mounting may be found. (Mortars not included.)
4. Explain in detail how the difference of level between two points may be determined by means of Y level and leveling rod.
5. Under the subject of hydrographic surveying, explain how the location of the point where a sounding is made may be determined by the following methods:
First. By two angles read in a boat between three points on shore which have been plotted on a chart.
Second. By two angles read on shore at the extremities of a plotted line.
6. Explain the principle and describe the reading of a barometer and enumerate the corrections to be applied to a reading before same can be used in range corrections.
7. Make a diagram and show how wind components are determined.

APPENDIX B.

WORK DONE BY DETACHMENT GUNNERY SPECIALIST CLASS AT THE ARTILLERY DISTRICT OF PORTLAND PREPARATORY TO ARMY AND NAVY MANEUVERS, 1903.

EIGHT PLOTTING BOARDS.

1. Battery Blair; 48" by 90"; 300 yards = 1"; 2 diagonal scale azimuth arcs, least reading $3' = 0.05^\circ$, B. C. station $1\frac{1}{4}"$ circular, secondary station $1\frac{1}{4}"$ circular and right tangent; gun displacement parallel lines 1" apart; range arcs every 100 yards; shore lines, 3 and 4 fathom lines; range scale center countersunk and set; covered with tracing paper.
2. Battery Sullivan; 48" by 90"; 300 yards = 1"; 2 diagonal scale azimuth arcs, least reading $3' = 0.05^\circ$, B. C. station $1\frac{1}{4}"$ circular, secondary station $1\frac{1}{4}"$ circular and right tangent; gun displacement parallel lines 1" apart; range arcs every 100 yards; shore lines, 3 and 4 fathom lines; range scale center countersunk and set; covered with tracing paper.
3. Battery De Hart; 48" by 90"; 300 yards = 1"; 2 diagonal scale azimuth arcs, least reading $3' = 0.05^\circ$, B. C. station $1\frac{1}{4}"$ circular, secondary station $1\frac{1}{4}"$ circular and right tangent; gun displacement parallel lines 1" apart; range arcs every 100 yards; shore lines, 3 and 4 fathom lines; range scale center countersunk and set; covered with tracing paper.
4. Mines (right base); 26" by 48"; 100 yards = 1"; two $1\frac{1}{4}"$ circular diagonal scale azimuth arcs, least reading $3' = 0.05^\circ$; shore lines, 3 and 4 fathom lines.
5. Mines (left base); 26" by 48"; 100 yards = 1"; two $1\frac{1}{4}"$ circular diagonal scale azimuth arcs, least reading $3' = 0.05^\circ$; shore lines, 3 and 4 fathom lines.
6. Preble, 8" converted; 48" by 54"; 150 yards = 1"; two $1\frac{1}{4}"$ circular diagonal scale azimuth arcs, least reading $3' = 0.05^\circ$.
7. Preble, mortar battery, Whitehead station; 40" by 100"; 300 yards = 1"; 4 diagonal scale azimuth arcs, least reading $3' = 0.05^\circ$; center mortar battery, $1\frac{1}{4}"$ circular, F. C. station $1\frac{1}{4}"$ tangent circular, F. C. station McKinley $1\frac{1}{4}"$ tangent circular; secondary station $1\frac{1}{4}"$ circular and right tangent; mortar zones and overlaps in wash; shore lines, 3 and 4 fathom lines; 4 range scale centers countersunk and set; covered with tracing paper.
8. Preble mortar battery, Preble station; 19" by 46"; 300 yards = 1"; 2 diagonal scale azimuth arcs, least reading $3' = 0.05^\circ$; center mortar battery $1\frac{1}{4}"$ circular, F. C. station $1\frac{1}{4}"$ circular and right tangent; mortar zones and overlaps in wash; shore lines, 3 and 4 fathom lines; 2 range scale centers countersunk and set; covered with tracing paper.

Animals **different** **of** **type**

- I. M. ...
 III. Dr. ...
 III. Dr. ...
 VI. Dr. ...

Answer: There is no answer to this question.

- I. Fire commander - Fire Control
- II. Subordinate commander - Fire Control
- III. Fire commander - Fire Control
- IV. Battery commander - Battery Control
- V. Battery commander - Battery Control
- VI. Fire commander - Fire Control
- VII. Battery commander - Battery Control
- VIII. Battery commander - Battery Control
- IX. Battery commander - Battery Control

[illegible]

23 by 29 : 00 = _____
area covered : 78 sq ft = _____

- I. NAME _____ MAINT. _____
 II. SEX _____ MAINT. _____
 III. AGE _____
 IV. FOOT _____

20 by 36 and 36 by 24 in. (90°) variant segments are also observed (range arcs from B.C. station) segments of less than 10 in. long, and some are quite *zoned*, and some opening zones, generally in scale, but of less than 10 in. lines.

- I. Battery Thompson.
- II. Battery Barry.
- III. Battery Hueston.
- IV. Battery Weymouth.
- V. Battery Bowdoin.
- VI. Battery Kendrick.
- VII. Battery Blair.
- VIII. Battery De Hart.
- IX. Battery Sullivan.

4 harbor charts showing shore line and 2 and 4 fathom lines, 1,000, 2,000, 3,000, and 100 yards = 1.

1 map showing location of signal and telephone stations, and watchlights. 2 miles = 1 .

1 tracing of same.

2 negative made no prints of same.

65 positive blueprints of same.

1 map showing location of forts and channels. 2 miles = 1 .

1 tracing of same.

64 blueprints of same.

1 sketch auxiliary defense of Fort Preble - field sketch on tracing paper. R. F.

उप-उप-उप-

12 blueprints of same.

1 sketch auxiliary defense at Cape Elizabeth R. F. 181818.

- 1 tracing of same.
- 6 blueprints of same.
- 18 blueprints of auxiliary defense sketches of Forts Williams, Levett, and McKinley and Long Island.
- 1 sketch auxiliary defenses, combined; R. F. 10100.
- 1 tracing of same.
- 30 blueprints of same.
- 3 tracings electrical installations.
- 18 blueprints of same.
- 24 blueprints of other tracings furnished.
- 1 set of 6 war-ship silhouettes, each to scale as seen through Lewis D. P. F. telescope at the ranges of 5,000 and 10,000 yards and at the horizon.
- 1 set tracings of same.
- 4 sets negative maduro prints of same.
- 125 sets positive blueprints of same in cover.
- 12 sets negative blueprints of same in cover.
- 1 topographical wall map (Geological Survey) mounted on muslin; 80" by 95".
- 1 topographical pocket map (Geological Survey) mounted on muslin; 24" by 30"; forts and searchlights drawn in.
- 55 topographical pocket maps (Geological Survey) mounted on muslin; 19" by 26"; forts and searchlights indicated on 6.
- 1 cover design for same.
- 1 tracing of same.
- 2 negative maduro prints of same.
- 30 positive blueprints of same on mounted drawing paper.
- 30 negative blueprints of same on mounted drawing paper.
- 36 photographic negatives of war ships, drawings, and views.
- 72 photographic prints of same.
- 2 scale arms reg graduated.
- 1 mortar-battery drift rule computed.
- 6 slide rules constructed and graduated.
- 1 wind component chart.
- 1 delta subdelta chart.
- 1 8" converted B. C. range table.
- 11 drawing boards made up; 15" by 19" to 48" by 54".
- 15 stretchers made, sizes 20" by 26" to 23" by 29".

**REPORT OF THE COMMANDANT OF THE SCHOOL
OF SUBMARINE DEFENSE.**

REPORT OF MAJ. ARTHUR MURRAY, ARTILLERY CORPS, COMMANDANT SCHOOL OF SUBMARINE DEFENSE.

SCHOOL OF SUBMARINE DEFENSE,
Fort Totten, N. Y., October 15, 1903.

The ADJUTANT-GENERAL, U. S. ARMY,
Washington, D. C.

SIR: In accordance with paragraph 17, General Orders, No. 145, Adjutant-General's Office, 1901, I have the honor to submit the following report on the School of Submarine Defense for the school year ending October 15, 1903.

CHANGES IN THE SCHOOL BOARD.

During the year the following changes in the board, as organized in the fall of 1901 on the establishment of the school, were made:

On January 31, 1903, Maj. C. D. Parkhurst, Artillery Corps, was relieved from duty at the school by Special Orders, No. 26, Adjutant-General's Office, 1903, and on the same date Capt. C. F. Parker, Artillery Corps, was, by letter of the War Department, relieved from duty as adjutant of the school and assigned to duty as instructor of the electrician sergeants' division, in place of Major Parkhurst, relieved.

On February 12, 1903, Capt. F. W. Coe, Artillery Corps, was assigned to duty as adjutant of the school by Special Orders, No. 36, Adjutant-General's Office, 1903; and on June 20 he was, by Special Orders, No. 144, Adjutant-General's Office, 1903, relieved from duty at the school.

On September 17, 1903, Capt. H. G. Bishop, Artillery Corps, was assigned to duty as adjutant of the school by Special Orders, No. 28, current series, War Department, Second Lieut. W. C. Baker, Artillery Corps, having acted as adjutant from the time Captain Coe was relieved until Captain Bishop reported for duty.

On October 15, 1902, the class of student officers for the year, consisting of the following-named officers of the Artillery Corps, reported for duty: (1) Capt. John T. Martin, (2) Capt. Sidney S. Jordan, (3) Capt. Henry D. Todd, jr., (4) Capt. Thomas W. Winston, (5) Capt. William C. Davis, (6) Capt. Le Roy S. Lyon, (7) Capt. Tiemann N. Horn, (8) Capt. Arthur W. Chase, (9) Capt. Samuel A. Kephart, (10) Capt. William M. Cruikshank.

On May 25, 1903, Captain Chase was relieved from duty at the school by Special Orders, No. 60, Adjutant-General's Office, 1903. The remaining officers of the class completed the course for student officers in a highly satisfactory manner, were given certificates of proficiency under the provisions of paragraph 15, General Orders, No. 145, Adjutant-General's Office, 1901, and were relieved from duty at the school on October 7, 1903, by Special Orders, No. 31, current series, War Department.

Regarding this class of student officers it should be noted that they are all graduates of the United States Military Academy and have had about ten years' service in the artillery, and that six of the ten are also graduates of the Artillery School. When the scientific and technical character of the work of the officers' division of the school, together with the necessity for having trained and experienced officers to carry out a systematic scheme of instruction (covering the submarine mine work of our entire coast) are considered, the soundness of the policy of the War Department in detailing officers of the rank, experience, and professional qualifications of those composing this class to take the course at this school will at once be apparent. With a few such graduates of the school in each artillery district little or no difficulty should be found in adequately and efficiently mining all of our important harbors in a very short time in case of necessity, provided that the requisite submarine mine material is on hand, that the present approved scheme of instruction in submarine mining for all posts supplied with a mine equipment has been properly carried out, and that a sufficient personnel and the necessary facilities for doing the required work promptly are then available.

In addition to the officers of the regular class, Capt. J. C. Gilmore, jr., Artillery Corps, a member of the last class, who was relieved from duty at the school before he had completed the special course his class was taking and detailed on staff duty, returned to the post on October 30, 1902, in accordance with War Department orders and instructions, for the purpose of completing such portion of the special course as he had not taken. Having done this satisfactorily to the school board, he was given a special certificate of proficiency, under the provisions of paragraph 15, General Orders, No. 145, Adjutant-General's Office, 1901, and on January 24, 1903, he was relieved from duty at the school by Special Orders, No. 11, Adjutant-General's Office, 1903.

For special reports by the instructors of the two departments of the officers' divisions of the school on the work of their respective departments during the school year, see Appendices A and B.

ELECTRICIAN SERGEANTS' DIVISION.

On March 28, 1903, the following-named enlisted men of the Artillery Corps, candidates for appointment as electrician sergeants, having satisfactorily completed the course for the electrician sergeants' division, were relieved from duty at the school by Special Orders, No. 73, Adjutant-General's Office, 1903, and ordered to report for duty at various artillery posts as acting electrician sergeants: (1) Sergt. William E. Mapes, Sixteenth Company; (2) Corp. Ralph G. Hussey, Ninety-sixth Company; (3) Private Charles D. Oothoudt, Fifty-eighth Company; (4) Sergt. Albert Kastner, One hundred and fourteenth Company; (5) Sergt. Henry Kunzmann, One hundred and ninth Company; (6) Private Bert R. Jones, One hundred and twenty-sixth Company; (7) Private Frank Kluesner, Seventh Company; (8) Private Hugo May, Fifty-first Company; (9) Private Richard Stoecker, Thirty-fifth Company; (10) Private William S. Hodgins, Eighty-second Company; (11) Sergt. Frank E. Walkley, Ninth Company; (12) Sergt. George F. Berg, Thirty-fifth Company.

On March 20, 1903, the following-named enlisted men of the Artillery Corps, candidates for appointment as electrician sergeants, reported at the school and began work as a class on April 1: (1) Sergt. Thomas Leary, Eighty-fourth Company; (2) Sergt. Marion G.

Putnam, One hundred and twenty-fifth Company; (3) Corpl. Fred A. Weikel, Fifty-fourth Company; (4) Corpl. Sylvester W. Whalen, Fifty-fourth Company; (5) Private Ernest Krauth, Fifty-fourth Company; (6) Private Sobieski B. Owens, Eighty-seventh Company; (7) Private Albert E. Jenkins, Twenty-ninth Company; (8) Private Robert L. Stephenson, One hundred and second Company.

All of these men completed the course in the electrician sergeants' division satisfactorily on October 1, and on the recommendation of the officer in charge of the division were given certificates of proficiency under the provisions of paragraph 110, Army Regulations.

On March 28 Corpl. James Armstrong, Troop E, Thirteenth Cavalry, reported at the school as a candidate for appointment as electrician sergeant, and joined the class which began work on April 1. On May 15, 1903, he deserted—cause unknown.

On June 15 and 21, 1903, respectively, Corpl. Charles M. Thornburg, Thirty-eighth Company, Coast Artillery, and Sergt. Max H. Hagenah, Company I, Second Infantry, reported at the school from the Philippines as candidates for appointment as electrician sergeant and joined the electrician sergeants' class. These men have not yet completed their course.

For special report by the instructor of the electrician sergeants' division of the school on the work of this division during the school year, see Appendix C.

MASTER ELECTRICIANS.

Under the provisions of General Orders, No. 63, Adjutant-General's Office, 1903 (see Appendix D), a theoretical examination of applicants for appointment as master electrician was held at various places throughout the country on June 15, 1903, the order relating to appointment of master electricians having been previously published in electrical journals and other periodicals.

This theoretical examination was passed satisfactorily by 8 electrician sergeants and 2 civilians, but as 4 of the electrician sergeants were married, these men were rejected by the War Department in conformity with paragraph 100, Army Regulations.

In compliance with paragraphs 23 and 24, Special Orders, No. 176, Adjutant-General's Office, 1903, and under authority contained in letter from the Adjutant-General's Office, dated August 11, 1903, the following-named men reported at the school during the month of August for the practical examination required by General Orders, No. 63, Adjutant-General's Office, 1903: (1) Electrician Sergt. Charles E. Bergbom, (2) Electrician Sergt. Samuel R. Kimble, (3) Electrician Sergt. Albert Kastner, (4) Electrician Sergt. Ralph G. Hussey, (5) Private Forest E. Overholser, (6) Private Guy L. Gearhart.

On September 30, 1903, these men completed their practical examination satisfactorily, and on October 2 they were recommended by the torpedo board for appointment as master electricians in order named,

TORPEDO COMPANY.

On January 27, 1903, the Fifty-fourth Company, Coast Artillery, was officially designated by War Department order as the "torpedo company," and its enlisted strength was increased from 109 to 140 men. The order authorizing the increase (see Appendix E) also placed the torpedo company on practically the same footing as other

coast artillery companies in regard to qualification of gunners and provides a means of supply of a few enlisted men, trained in matters relating to submarine-mine defense, to each of the different artillery posts now supplied with a mine equipment.

On September 26, 1903, a board of artillery officers, composed of three members of the last class at the school, was ordered by the War Department to convene at Fort Totten on October 19 for the purpose of examining all men of the torpedo company reported qualified for examination. On the conclusion of this examination 33½ per cent of the company will be recommended for transfer to other posts, under the provisions of the order which authorized the increase in strength of the company.

PROGRAMMES OF INSTRUCTION.

The programmes of the different departments for the school year of 1903, as arranged by the school board and approved by the Commanding General of the Army, are as follows:

Department of electricity, mines, and mechanism.—Capt. George F. Landers, Artillery Corps, instructor. Instruction will be given daily (Sundays excepted, and Saturdays ordinarily so), from February 1 to August 15, in the subjects enumerated below. Officers undergoing instruction are expected to devote not less than forty-two hours per week to their school work.

General electrical principles, laws and measurements, and introduction to their application.

Practice in the accurate use of voltmeter and ammeter for the measurement of E. M. F.'s currents and resistances.

The principles, construction, and operation of:

- (a) Oil and gas engines.
- (b) Steam engines and boilers.
- (c) Direct current dynamos and motors.
- (d) Alternating-current dynamos and motors.
- (e) Searchlights.

The installation and care of storage batteries.

Electric lighting and distribution of electric power.

The telegraph and telephone.

Cable testing.

The arrangement and wiring of a mining casemate and of the switchboard.

Practical work in preparing and planting submarine mines.

Practical work in taking charge of the preparation and planting of submarine mines.

Organization of working parties for submarine mine work.

Experimental work and testing of new devices.

The course throughout the year is to be supplemented by visits to the various factories, machine shops, and power plants in the vicinity of New York.

An examination for proficiency will be held at the end of the course. This examination will be mainly of a practical nature in the management of the various power plants and machinery used during the course, in the use of the various electrical instruments, and in planting and operating submarine mines. Each officer is expected to demonstrate his ability to care for, operate, handle, and use any of the machines and appurtenances of seacoast fortifications. This practical examination will also be supplemented by a written one, including

the solution of problems bearing upon the principles involved in the work during the year.

Department of chemistry and explosives.—Capt. John W. Ruckman, Artillery Corps, instructor.

This course should embrace thorough, theoretical, and practical instruction, and combine them in such a manner as to lend mutual strength to each other. In the absence of suitable laboratories a complete and satisfactory execution of this idea becomes impossible, and it may even be impossible to give any theoretical instruction until a laboratory be prepared and equipped. The scheme is, therefore, tentative.

Theoretical instruction: From the present outlook and the reasons above stated, this important branch of the course will be limited to study of a suitable text-book and lectures.

Practical instruction: It is contemplated to make this branch of the course as extensive and thorough as practicable with available and obtainable resources and facilities. It will embrace practical considerations connected with the manufacture, transportation, and storage of primers, fuses, powders, and explosives and their application to military purposes.

Special emphasis will be laid upon considerations relative to the safety of the various kinds of explosives, and special attention devoted to the subject. Physical tests, as far as possible, will be applied to various explosives to determine their condition.

The time allotted this department in the course prescribed was four and a half months; but, owing to the absence of the class during the army and navy maneuvers, this time was necessarily reduced to three and a half months.

Electrician sergeants' division.—Maj. C. D. Parkhurst, Artillery Corps, instructor from October 15, 1902, to January 31, 1903; Capt. C. F. Parker, Artillery Corps, instructor from January 31, 1903, until October 15, 1903.

The course embraces:

1. Arithmetic, elementary algebra, and mensuration.
2. Elementary principles of physics.
3. Electricity and magnetism.
4. Oil engines.
5. Steam engines and boilers.
6. Submarine mines.
7. Practical work—operating and caring for electric batteries, generators, motors, telephones, telautographs, searchlights, oil engines, steam engines and boilers, electrical wiring, and the use of tools and machines.
8. Army Regulations.

The hours of attendance are: 8 a. m. till 11.30 a. m. daily, except Sundays, and 1 p. m. till 4.30 p. m. daily, except Saturdays and Sundays.

The torpedo company.—Capt. George F. Landers, Artillery Corps, commanding.

The schedule followed in the instruction of the company in submarine mine work during the closed season is given in Appendix F. Two hours and a half daily, Saturdays and Sundays excepted, is devoted to this instruction. During the open season the company is given two hours and a half practical mine work daily, Saturdays and Sundays excepted, in which the student officers participate. The entire company, including extra and special duty men, is given ten minutes calisthenics, twenty minutes infantry drill, and thirty min-

utes submarine mine work for four days in every five, Saturdays and Sundays excepted, and on the fifth day the thirty minutes of submarine mine work is extended to two hours and a half. In this way the extra and special duty men, who are ordinarily trained and skilled men, and of whom a comparatively large number are required for school work, are given sufficient daily instruction to keep them well up in all that pertains to their military duties proper.

WORK OF THE SCHOOL.

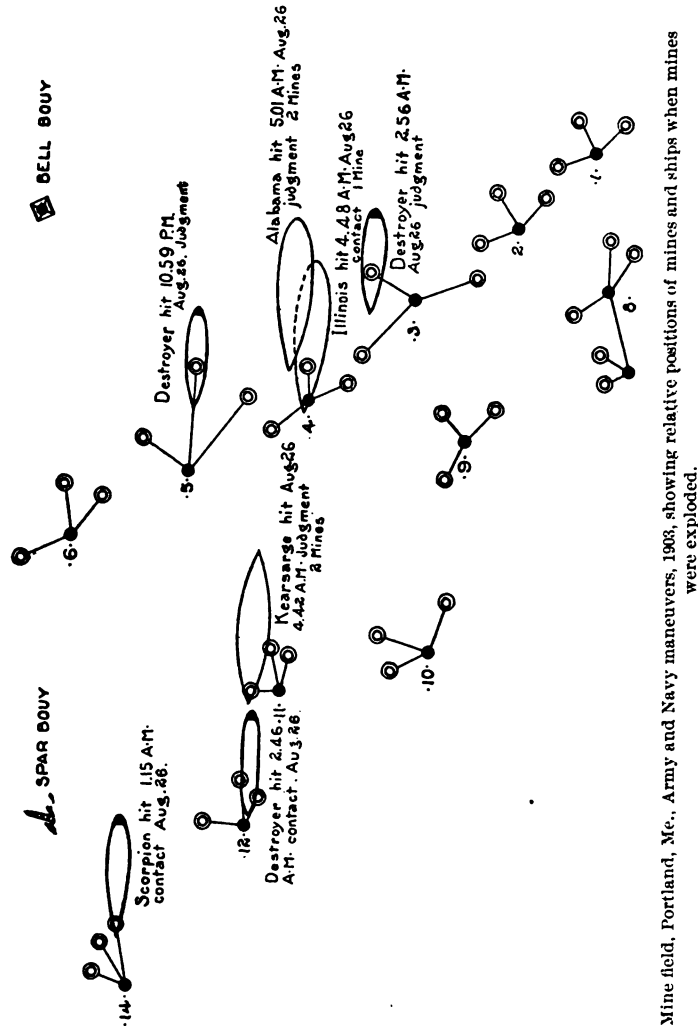
This, as indicated by the above programmes of instruction, has been continued along the same general lines as last year. Considering the unfinished state of the school buildings and the lack of necessary apparatus and proper facilities for instruction, the work of the year has been exceedingly satisfactory. That this has been so satisfactory is mainly due to the aid given the school by the chief of artillery, the hearty support of the other members of the school staff, and the willing and conscientious work of the student officers and the members of electrician sergeants' class.

In addition to their work at the school, the student officers, the electrician sergeants' class, and the Torpedo Company were sent to Portland, Me., to take part in the army and navy maneuvers of 1903. The members of the electrician sergeants' class were charged with operating searchlights, and in this capacity are reported to have done excellent work. The student officers and the Torpedo Company planted and operated the mines placed in the harbor, and the results obtained by their work were successful beyond the expectations of anyone concerned therein. In illustration of these successful results, the relative position of the mines planted in one of the channels and the enemy's vessels at the moment the corresponding fuses in circuit on shore were exploded are shown in Plate I. The practical experience gained in this work, which called for the rapid planting of mines in water from 60 to 120 feet in depth and in a current of about 3 miles an hour, is considered to have been of the greatest possible value to all those engaged in the work, and consequently to the school as a matter of instruction and training. More than this, the positive knowledge of what may be done with mines planted under such circumstances, and the confidence thereby instilled in the minds of all officers of the Army and Navy who saw the mines operated and knew of the remarkable success attained with the mines, is believed to have been sufficient to amply repay the Government for all expenses whatsoever in connection with these maneuvers. Certainly no one who saw this work or who knows of these successful results obtained with mines in such waters can for a moment question the advisability of completing to the minutest detail the mining equipment of every important harbor on our entire coast at the earliest possible moment, and of training the necessary men to plant and operate the mines as rapidly as this can possibly be done.

SCHOOL BUILDINGS.

During the school year the work of enlarging and remodeling the building formerly used as the Engineer School library and museum for the use of the officers' division of the school, which was begun last year, has been practically completed, and the building as completed has been equipped with modern apparatus for the two departments of this division as far as possible with funds available for the purpose. This building will hereafter be known as the "officers' laboratory," and will be available for the use of the next class of student officers.

The remodeling and rearranging of the building selected last year for a school library and officers' mess building has also been completed during the year; and the library has been well supplied with suitable furniture and equipped with about 1,300 volumes of military and scientific works and books of reference, as well as the principal military and scientific magazines and periodicals. This building will



Mine field, Portland, Me., Army and Navy maneuvers, 1903, showing relative positions of mines and ships when mines were exploded.

hereafter be known as the "library and officers' mess building," and is now being used for both of these purposes, for which it is admirably adapted.

For a detailed report of the expenditure of school funds upon the above-named buildings and other school purposes, see Appendices G, H, and I.

Besides the work done with funds especially appropriated for or allotted to the school, a considerable amount of other work in connection with the approved scheme for the improvement of the post and

school has been begun with funds allotted from appropriations for the quartermaster's department. The principal items of the approved scheme for which funds have been thus allotted are (1) an administration building, (2) a bachelor officers' building for eight officers, (3) a double set of married officers' quarters, (4) two double sets of noncommissioned officers' quarters, (5) a bath house for officers, (6) kitchen additions to three barracks, (7) two boathouses, (8) a wharf storage shed, (9) new sewer and water system, (10) new roads and walks, (11) leveling parade ground, and (12) extending sea wall on northeast of reservation.

Capt. George H. McManus, Artillery Corps, who was assigned to duty at the post by Special Orders 84, Adjutant General's Office, 1903, has charge of and is now diligently engaged upon this work, which so far as it has progressed has been exceedingly satisfactory.

In addition to this work, which is being done by the quartermaster's department, the engineer department is now engaged in building at the post an excellent brick torpedo storehouse for the mine equipment of the post and school, and a typical torpedo-loading room for service and instruction purposes.

While it will thus be seen that a good beginning has been made upon the approved scheme for the improvement of the post and school, an examination of this scheme (see Appendix J) will show that much yet remains to be done before it will be completed. As an illustration of the pressing necessity for completing this scheme at the earliest possible moment in the best interests of the service and school it is deemed sufficient to state that it now appears as if there will be 31 officers, 15 of whom are married and 16 bachelors, on duty at the post and school during the coming winter, while there are but 23 sets of officers' quarters on the post, 10 of which are suitable for bachelors and 13 for married officers. The character and condition of these quarters are clearly described in Appendix J. The post noncommissioned staff and the electrician sergeants on duty at the school are even worse off for quarters than are the officers.

BOATS FOR MINE WORK AT THE SCHOOL.

The steam lighter *Williams* and the 30-foot electric launch, *The Erg*, with which the school was supplied last year by the Quartermaster's Department for instruction purposes, and the small steam launch, *The Dyne*, and five yawls turned over for the use of the school on the departure of the engineers for Washington Barracks in the fall of 1901 have been used at the school during the year for mine work, and were also taken to Portland, Me., and there used for mine work in connection with the army and navy maneuvers.

As stated in my last year's report, the *Williams* is not well suited for mine work, and *The Dyne* is only worth such temporary repairs as will enable her to be used until another boat of the same general type can be built. During the past year the Secretary of War authorized the Quartermaster's Department to build two boats to replace the *Williams* and *The Dyne*, as well as three other boats of the same type as the boat which is to replace the *Williams*. Besides these boats the torpedo board has asked for 140 yawls for use in connection with instruction in submarine mining at 35 other posts supplied with a mine equipment, and it is believed that these yawls will be supplied as requested.

The type plan for the four steam lighters as designed by Mr. George A. Anthony, marine engineer of the Quartermaster's Department, was approved by the torpedo board and afterwards by the Secretary of

War. The contract for the building of these boats has been let and work on them has begun. It has been unofficially reported that one is to be completed in February, one in March, and two in April, 1904.

The type plan for the yawls has also been completed by Mr. Anthony and has been approved by the torpedo board. The plan of the boat to replace *The Dyne* has not yet been designed.

When the two boats intended for the school are built, the school will be admirably equipped in this respect for submarine mine work.

TORPEDO INSTRUCTION AT OTHER POSTS.

The duplicate copies of reports of instruction given in compliance with General Orders, No. 51, Adjutant-General's Office, 1902, at other artillery posts supplied with a mine equipment, which are furnished the Torpedo Board for its information, show that at quite a number of posts most excellent elementary mine work has been and is being done; while at others, owing to a number of causes, comparatively little has been done or undertaken. Much of the good work done is believed to be largely due to the instruction given at different posts by Capt. G. F. Landers, Artillery Corps, instructor of electricity, mines, and mechanism, while on his tour of inspection and instruction in accordance with Special Orders, No. 272, Adjutant-General's Office, 1902. Other good work has been done by the officers of the class of 1902 at this school, who were assigned to duty as district submarine mine officers; and in several instances most excellent work, as shown by their reports and the indorsements thereon, has been done by officers who have had no previous instruction in submarine mining, but have taken the Torpedo Manual as a guide, and diligently, earnestly, and energetically carried out the general scheme of elementary instruction outlined in General Orders, No. 51, Adjutant-General's Office, 1902. Notable among these latter officers, and deserving of special mention for their good work, are Capt. A. S. Fleming, First Lieuts. J. R. Pourie, S. G. Shartle, and M. B. Wilhoit, Artillery Corps.

Now that another class of student officers has graduated at the school and the members of the class have been assigned to duty as district submarine mine officers in a number of important artillery districts, and also that there are fair prospects that the new boats above referred to will be completed and available for the work of mine planting at different artillery posts next spring, it is confidently believed that the instruction in submarine mining given at posts now partially supplied with a mine equipment will be found still more satisfactory during the next year than it has been during the past. It should, however, be clearly and distinctly understood that this instruction can never be even approximately what it should be until proper buildings and other facilities for storing, caring for, handling, and operating mines are provided at every artillery post whose waters are to be mined, and until the mine equipment proper of these posts is complete in every detail relating to at least some part of the total number of mines called for in the approved projects for the different harbors.

With a view to obtaining data for estimates as to the buildings, material, etc., necessary to complete the equipment of our most important harbors, circular letters and specially prepared blank forms were sent to every submarine-mine officer in the country, with a request that the blank forms be filled out with data wanted. The replies were carefully abstracted, and estimates based on the data thus obtained were submitted on September 15 to the War Department.

RECOMMENDATIONS.

1. That owing to the ill health of Capt. George F. Landers, Artillery Corps, instructor of the department of electricity, mines, and mechanism, he be relieved from duty at the school, in accordance with his request of September 14, 1903, and that the officer named in my letter of September 4, 1903, be detailed for duty as instructor in his stead.

Regarding Captain Landers it is further recommended that if practicable he be detailed to inspect and report upon the submarine mine instruction now being given under provisions of General Orders 51, Adjutant-General's Office, 1902, at all artillery posts supplied with mine equipment. Captain Landers is peculiarly well fitted for this work, and it is believed that work of such character would be beneficial rather than prejudicial to his health. Certainly his services, if so detailed, would be of the greatest possible benefit to the country in systematizing the submarine mine work and instruction at the different posts where instruction is now being given.

2. That this post be equipped, as recommended by the instructor of electrician sergeants' division (see Appendix C), at the earliest possible moment with the different electrical appurtenances of seacoast fortifications already installed at other artillery posts; and, further, that this post be placed first on the list of those hereafter to be supplied with any such appurtenance as soon as a type is adopted. The absolute necessity for keeping this post thoroughly up to date in its equipments with all such appurtenances, so long as it is the practical training school for the skilled men required to care for and operate such appurtenances at all other coast artillery posts of the country, seems to be self-evident—certainly it would appear so to anyone who has had anything to do with the practical training of men for such work should he give the matter a moment's consideration.

3. That a correspondence school for enlisted men desirous of becoming electricians or mechanics be instituted at this place in connection with the electrician sergeants' division, as recommended by the instructor thereof in Appendix C, the expenses connected with this work to be paid from the funds appropriated for incidental expenses of the school. If this recommendation is approved, the item for incidental expenses of the school, as submitted in the estimates for the school for next year, should be increased by at least \$5,000 to enable about 100 men to take the correspondence course.

4. That the approved scheme for the improvement of the buildings and grounds of the post, the school, and the torpedo depot (see Appendix J) be completed at the earliest possible moment; if possible, that the requisite funds for this purpose be obtained by means of a special appropriation for this school, as was done last year in cases of the engineer school of application and the War College. During the past this approved scheme has been partially carried out, as shown on pages 173 and 174 ante; but until the scheme is completed as approved neither the post, the school, nor the depot will be what they properly should be—a credit to the Government and to all directly concerned therewith.

5. That the barrack recommended in the report of the board on improvements (see Appendix J) be built, if possible, during the next year. At present there are between thirty and forty men candidates for appointment as electrician sergeants, master electricians, etc., on duty at the post and school, who are quartered as best possible in

company barracks in rooms needed by the companies. This is by no means a satisfactory arrangement. If the barrack is built as recommended, it will not only provide suitable quarters for these men, but also be available for band quarters.

6. That an effort be made to have a bill passed at the next session of Congress providing this school with a band. In this connection attention is again respectfully invited to the fact that this is the only one of the four service schools not now provided with a band, and that one of these schools has two bands.

7. That special effort be made during the next session of Congress to obtain an appropriation for a hospital at this place. A special item for \$30,000 for such a building was inserted by the War Department in last year's appropriation bill for the Army, but this is understood to have been cut out in a committee room. It is recommended that this item be inserted in this year's bill and that every effort be made by proper authorities to secure its passage.

8. That a special effort be made during the coming session of Congress to secure an appropriation for a storehouse, repair shop, and cable tank for use of the torpedo depot at this place. At this time the depot is very seriously crippled for lack of these buildings. Plans for such buildings as are needed have been furnished the engineer officer of this artillery district, and it is understood that he has been instructed by the Chief of Engineers to submit estimates for these buildings, with a view of the insertion of an item for required amount in the next fortification bill.

9. That special effort also be made to secure an appropriation of \$70,000 for a model power plant at this school like and at least equal in capacity to any of the plants being erected by the Engineer Department elsewhere, for use both for instruction and war purposes. In this connection it will be remembered that the artillery is being called upon to provide the necessary skilled men to care for and operate the large and expensive plants already erected and being erected by the engineers at various coast-artillery posts, which plants have heretofore been cared for by civilian experts employed by the Engineer Department; and further that upon the commandant of this school largely devolves the responsibility for the proper training of artillerymen for these important duties. This training, which should without question be almost wholly practical, can not be properly given without a suitable and adequate plant for instruction purposes. On this subject the president of the Army War College board stated in an indorsement dated Washington, May 14th, 1903:

* * * To construct at Fort Totten a model plant like and at least equal in capacity to the plants being erected by the engineers at other posts of the same size as this, would appear to be an eminently proper application of any \$70,000 of school funds that can be allotted for the purpose. * * * The desirability of having such a \$70,000 plant for instruction purposes is not questioned. * * *

An item for \$70,000 for such a plant was therefore inserted in the estimates for the school for the next year, and recommendation is accordingly made that an appropriation be secured, if possible, to cover this item.

10. That every possible effort also be made by the proper authorities to secure an appropriation covering the estimates, referred to on page 20, which were submitted this year for buildings, material, etc., necessary to complete the submarine-mine equipment of our most important harbors. The necessity for completing this equipment without delay is clearly set forth in the following extracts from the proceedings of the torpedo board on April 2 and February 20, 1903, respectively:

The torpedo board respectfully invites attention to the inclosed copy of a memorandum made by the Chief of Engineers for the information of the Chief of Artillery in connection with the matter of the expenditure of the \$50,000 appropriated by the Fifty-seventh Congress for mining casemates, cable tanks, etc., and in this connection would state that, from this and other data at hand relating to the buildings and material already provided for the submarine-mine defense of the country, the submarine-mine equipment as now provided is by no means complete, and unless prompt and proper measures are taken to remedy these deficiencies, this particular and important element of defense will be found wanting if it does not absolutely fail, in the event of a sudden and unexpected outbreak of war.

With regard to this matter of the completion of the entire approved scheme of submarine-mine defense of the country and the probable cost thereof, the board would further state, most positively and emphatically, that, so far as it is able to see, there is absolutely no reason, except the lack of the necessary funds for the work, why this important element of coast defense should not be completed at once; and also that, so far as it is able to estimate, the probable cost of the completion of the entire approved scheme will not exceed, and possibly not equal, one-half the cost of one modern battle ship. If this estimate of the board is even approximately correct, the necessity for the prompt completion of the entire scheme of submarine-mine defense and the advantage to be thereby gained will at once be seen, for the moment that this is done it will enable the whole of our much more costly Navy to practically cut loose from our coast and carry war wherever strategic reasons may require with perfect confidence that every harbor provided with a mine defense is practically secure against any sudden attack an enemy could bring against it.

It is considered by the board that in this connection it can not be too strongly stated nor too often repeated that there is not at the present time a single artillery post among all the thirty or more presumably supplied with a submarine-mine equipment that is complete or even approximately complete in its equipment of material and proper buildings for caring for the material and operating the system as contemplated in and measured by the standard laid down in the Torpedo Manual (published by the Engineer Department before the artillery was charged with the submarine-mine defense of the country), and it is further considered that until this equipment of material and buildings is at least approximately up to the prescribed standard unceasing effort should be made to procure the necessary appropriations of funds to purchase the necessary material and erect proper buildings by everyone responsible for our country's defense.

On account of the gravity and importance of this matter, it is further recommended that the attention of the General Staff, whose duty under the law is "to prepare plans for the national defense," be specially invited to it.

In his report for the year 1901 the artillery inspector of the Department of the East (now the commandant of the Artillery School), stated:

The most important problem now pressing upon the artillery is how to provide a sufficient number of officers and men qualified to operate the mining defenses of our harbors.

After a two years' study of all matters pertaining to the submarine-mine defense of the country, and a careful noting of the results obtained in submarine-mine instruction and work at this school and at other coast artillery posts, I am convinced that the most important problems now pressing upon the artillery are: (1) The procuring of the appurtenances of seacoast fortifications necessary to develop the hitting capacity of our heavy guns and mortars already mounted to their highest possible limit, by which alone the full value of such guns and mortars can be estimated or obtained; (2) the procuring of the buildings, material, etc., necessary to complete the submarine-mine equipment of our harbors, without which, as stated by the torpedo board, "this particular and important element of defense will be found wanting, if it does not absolutely fail, in the event of a sudden and unexpected outbreak of war."

Very respectfully,

ARTHUR MURRAY,
Major, Artillery Corps, Commandant.

APPENDIX A.

SCHOOL OF SUBMARINE DEFENSE,
DEPARTMENT OF ELECTRICITY, MINES, AND MECHANISM.
Fort Totten, N. Y., October 1, 1903.

The ADJUTANT.

SIR: I have the honor to submit the following report for the school year ending October 7, 1903:

The student officers, 10 in number, Capts. John T. Martin, S. S. Jordan, Henry D. Todd, jr., T. W. Winston, William C. Davis, Le Roy S. Lyon, T. N. Horn, Arthur W. Chase, Samuel A. Kephart, and William W. Cruikshank, Artillery Corps, reported to this department for instruction on Tuesday, January 27, 1903, and continued in this department until September 15, 1903. On June 8, 1903, Capt. Arthur W. Chase, A. C., was relieved from duty at the school.

As the officers' laboratory was not completed, it was necessary, as during the preceding year, to use the torpedo company's laboratory, and the programme of instruction was as follows:

"Instruction will be given daily (Sundays excepted and Saturdays ordinarily so) in the subjects enumerated below. Officers undergoing instruction are expected to devote not less than forty-two hours per week to their school work.

OUTLINE OF WORK.

General electrical principles, laws, measurements, and the introduction to their application.

Practice in the accurate use of the voltmeter and ammeter for the measurement of E. M. F.'s currents and resistances.

The principles, construction, and operation of (a) oil engines; (b) steam engines and boilers; (c) direct-current dynamos and motors; (d) alternating-current dynamos.

The installation and care of storage batteries.

Electrical lighting and distribution of electric power.

The telegraph and telephone.

Cable testing.

The arrangement and wiring of a mining casemate and the switchboard.

Practical work in preparing and planting submarine mines.

Practical work in taking charge of the preparation and planting of submarine mines.

Organization of working parties for submarine-mine work.

Experimental work and testing new devices.

The course throughout the year is to be supplemented by visits to the various factories, machine shops, and power plants in the vicinity of New York.

The manner of conducting the work was as follows:

At the close of each week the work for the following week was given out, and time was taken daily to make any explanations of the points that were obscure to the class, and in addition thereto individual instruction was being given constantly. The officers were expected to so arrange their work before reaching the laboratory that they could be continually engaged in experimental work—that is, during their hours at the laboratory their work was to be practical, and not studying from text-books. On Friday a synopsis of the week's work was had by assigning a certain subject to each officer, who was expected to make explanations and answer the questions of other officers. This was found to be most valuable, and it is thought that Friday's work did a great deal to clear up doubtful points and to stimulate attention to the course. The progress of the class could be well gauged by watching their notebooks, by individual questions, and by the review of the work on Friday.

About the middle of May "outdoor" work began. This consisted of handling cable in the tank, measuring copper resistance and insulation resistance of the cable, care and preservation; the laying and taking up of single and multiple cable, and the actual loading, planting, testing, and repair of mines. This work continued until July 1, when it was supplemented by work incident to the army and navy maneuvers at Portland. During this month the class made out a complete list of material necessary at Portland. The nature of the problem was first to select the location of the mine fields, and to make out a requisition for all the material required. From August 3 to September 9 the class was engaged in submarine-mine work at Portland.

It will be observed that for three months and a half the work was practical laboratory work, for two months and a half practical "outdoor" work at Fort Totten, and the six weeks of practical work at the maneuvers.

The year's work has been eminently satisfactory, and there is no doubt that the submarine-mine system of the Army has been benefited by the work done by this class, and each member of the class feels in turn that he is able to meet the problems that may arise. Much of the latter feeling is due to the experience gained at the maneuvers, and it is the most valuable schooling to be had.

The officers' laboratory is complete and is being equipped as rapidly as possible. At present there is set up ready for use a 25-horsepower engine, made by the New York Safety Steam Power Company; a dynamo for alternating and direct current, a 40-horsepower Worthington boiler, with pump, injector, heaters, condensers, forced draft, etc.; an "E 11" chloride accumulator battery, ready to put in commission. In addition to this there are on hand many electrical measuring instruments. While the laboratory is not yet fully equipped, most satisfactory work could begin at once.

In all the practical work of the department the details are made from the torpedo company. The men who report for duty are divided off and assigned to the various student officers for work. These details change from day to day, owing to the routine details made for guard, company duty, or elsewhere, and the result has not been very satisfactory in any particular. It is recommended that hereafter the officer in charge of the department call upon the torpedo company, through the post commander for certain details of men, and that the same details report daily until the completion of this work. This enables the officers and men to pick up where they left off, making the instruction for the soldier systematic and complete, and greatly simplifies the officers' work.

It is also recommended that the men on special and extra duty be assigned to the details above mentioned until each man is proficient in the duties of submarine-mine work.

Respectfully submitted.

G. F. LANDERS,
Captain, Artillery Corps,
Instructor Department Electricity, Mines and Mechanism.

APPENDIX B.

HEADQUARTERS SCHOOL OF SUBMARINE DEFENSE, FORT TOTTEN, N. Y.,
DEPARTMENT OF CHEMISTRY AND EXPLOSIVES,
October 1, 1903.

The ADJUTANT,
School of Submarine Defense.

SIR: I have the honor to submit the following report upon the work and the progress in the department of chemistry and explosives during the past year.

The class of 10 officers, having reported at the school, commenced work in this department on November 1, 1902. The term of instruction was pursued under adverse circumstances until January 26, 1903, when it ceased—for the time—with a written examination.

Two small rooms in the instrument building, being the best accommodation available, were used for the purpose, although they were in many ways unsuitable for such work and frequently uncomfortable.

Owing to the lack of apparatus and a suitable building no practical work could be done and the course was therefore limited to blackboard recitations and theoretical discussions of the subject, but notwithstanding these drawbacks the instruction was valuable and formed the basis for understanding and treating the practical problems which in future may arise in connection with high explosives.

On account of the above-mentioned deficiencies, it became evident toward the end of January that the course could not be continued longer to advantage, and closed on January 26, with the idea of resuming the same when the conditions should become more satisfactory and the season more suitable for work out of doors. In accordance therewith, the practical work was taken up on September 14 and carried on until September 30, leaving thirteen days, ten of which were devoted to testing the more important high explosives in problems of demolition, and the remaining three to making the standard tests for stability.

The method followed in the school was a combination of recitation and lecture, in which the students assisted the instructor by preparing themselves on subjects previously assigned, and presenting the results of their study to the class.

The best and most modern books on the subject were always on hand for study and reference. No particular man's theories were insisted on, and as the students were all men of mature mind and judgment, they were as a rule encouraged to read widely and draw their own conclusions.

Work on the laboratory building has continued throughout the year, but is now drawing near the end. During this period apparatus and supplies have been purchased and they will be available for the coming class. Efforts have been made to equip the laboratory with the most modern apparatus and accessories, having always in mind the highest grade of scientific work. It is believed we now have the groundwork installed to secure this end and that the beginning may be developed and amplified according to the teachings of future experience—the scaffolding thereby becoming a completed and finished structure.

In closing I invite attention to photography as a means of scientific investigation, and more particularly in its relation to the subtle and momentary phenomena which enter the investigation of high explosives. I therefore urge the need of a small but highly specialized photographic laboratory to be used as an auxiliary to the other branches of this department.

Very respectfully,

JOHN W. RUCKMAN,
*Captain, Artillery Corps, Instructor Department
Chemistry and Explosives, School of Submarine Defense.*

APPENDIX C.

ELECTRICIAN SERGEANTS' DIVISION,
SCHOOL OF SUBMARINE DEFENSE,
Fort Totten, N. Y., October 1, 1903.

The ADJUTANT,
School of Submarine Defense.

SIR: I have the honor to submit the following report of this division:

In compliance with letter from Adjutant-General's Office, dated January 31, 1903, I succeeded Major Parkhurst, Artillery Corps, February 1, 1903.

The equipment of the shop was excellent, the machines being the best that could be bought, and capable of doing a large amount of useful work, in addition to their use for instruction purposes.

In adding to this equipment the idea has been to utilize this as the repair shop of the torpedo depot, thus saving duplication of plant. During the past six months a power plant has been installed, consisting of an 80-horsepower Armington-Sims engine (turned over to the commandant of the school by the engineers), a 100-horsepower Babcock & Wilcox boiler, and a 65-kilowatt Stanley inductor alternator and switch board. This plant has sufficient capacity to light the existing buildings of the post and the exterior grounds. A storage battery, booster, and switch board has been contracted for and will soon be installed.

An instruction telephone set, consisting of switch board, power board, storage battery, and eight pairs of telephones, illustrating the four principal methods of installation, has been completed.

The building used for instruction purposes and repair work is very much crowded, and the depot shop, for which detailed plans have already been submitted, is urgently needed.

Instruction of candidates for electrician sergeants should be chiefly practical; they should have access to the best and most up-to-date equipment. It is therefore urged that this post be placed at the top of the list for equipment with searchlights, motors for guns, and communications. An automobile searchlight is especially desirable for this post on account of the lay of the channel. A steam turbine should be included in the equipment; at least one gun should be equipped with motors for retracting, traversing, elevating, and loading.

The need for mechanics and electricians will go on increasing. For master electricians we will probably have to look to the electrician sergeants, for the inducements offered will not attract the kind of men we require from civil life. We will have to educate our own men as most large corporations are now doing. At every artillery post there are men capable and desirous of becoming electri-

cians and mechanics. Post plants offer facilities for practical work, and if this could be supplemented by well-directed theoretical instruction, we would have men well trained for their work.

I therefore recommend the starting of a correspondence school based on the International School of Correspondence of Scranton, Pa., and the American School of Correspondence of the Armour Institute, Chicago. At a cost of about \$4 per month per man a thorough course in mechanics, steam, and electricity could be given. Those men who should fail to keep up to the standard could be dropped. From the men who complete this course should be selected the candidates for electrician sergeants, the company mechanics, and electricians.

This correspondence school would in no way take the place of the electrician sergeants' division of this school, but would be a complement of it. Such preliminary instruction would raise the standard of electrician sergeants by furnishing better and more material to select from. Candidates for master electrician should take an advanced course. If this general scheme meets approval, a detailed plan can be at once submitted.

Very respectfully,

C. F. PARKER,
Captain, Artillery Corps, Instructor.

APPENDIX D.

GENERAL ORDERS, }
No. 63. }

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
Washington, April 28, 1903.

* * * * *

By direction of the Secretary of War, the following extract from the act of Congress making appropriation for the support of the Army for the fiscal year ending June 30, 1904, is published for the information and guidance of all concerned:

"One hundred electrician sergeants, to be assigned for duty at such places as the Secretary of War may direct, at four hundred and eight dollars each, forty thousand eight hundred dollars: *Provided*, That there shall be added to the Artillery Corps twenty-five master electricians, to be enlisted by the Secretary of War, after such examination as he may prescribe, who shall receive seventy-five dollars per month and the allowance of an ordnance sergeant, twenty-two thousand five hundred dollars."

Applications of enlisted men for appointment as master electricians will be forwarded through military channels to the commandant of the school of submarine defense, Fort Totten, N. Y. An applicant will not be recommended for appointment by his commanding officer unless he has had a thorough course of study, embracing mathematics, to include geometry and trigonometry, physics, electricity, and mechanical drawing, and three years of practical training in the use and care of steam and oil engines, of machines and machinists' tools, and of electrical appliances and apparatus, and unless he shall have fully satisfied his immediate commander that he possesses the requisite theoretical, practical, and moral qualifications for the position of master electrician. No application will be forwarded unless it is accompanied by proper evidence in the form of certificates from responsible parties showing that the applicant has received the required theoretical and practical training and that his moral character is good.

Upon the receipt of an application from an enlisted man, duly approved and accompanied by proper certificates, the commandant of the school will send a set of examination papers to the commanding officer of the station at which the applicant may be, with a request that he be given the theoretical examination called for by the papers.

Applicants from civil life for appointment as master electricians will apply direct to the commandant of the school of submarine defense for examination, and, as in the case of enlisted men, their applications must be accompanied by certificates from responsible parties showing that the applicant has received a thorough course of study embracing mathematics to include geometry and trigonometry, physics, electricity, and mechanical drawing; and three years of practical training in the use and care of steam and oil engines, of machines and

machinists' tools, and of electrical appliances and apparatus, and also that his moral character is good. These certificates should preferably be from principals of schools and former employers, and should clearly show the amount and scope of theoretical instruction the applicant has received, his practical experience and skill in work of the kind designated, and his habits of industry and sobriety.

Upon receipt of an application from a civilian, accompanied by satisfactory certificates, the commandant of the school will direct the applicant to report at his own expense, to the commanding officer of the nearest military post for examination, and will send to the commanding officer of that post a set of examination papers with the request that the applicant be given the examination called for by the papers on his reporting, provided he first passes the necessary physical examination for enlistment.

The examination papers in cases of both enlisted men and civilians will be prepared by the torpedo board, and will be of such scope as to clearly demonstrate that the applicant has the requisite theoretical knowledge of mathematics, physics, electricity, and mechanical drawing for the position of master electrician. Upon the completion of a set of examination papers by an applicant they will be returned by the examining officer direct to the commandant of the school. Should the theoretical examination of an applicant be satisfactory to the torpedo board, the commandant will, if the applicant be an enlisted man, request the proper authority to order him to the school for a practical examination; if the applicant be a civilian, the commandant will request the commanding officer of the post where the applicant was examined to enlist him as a private in the Artillery Corps, and to have him ordered to report at the school for a practical examination, with the understanding that if he fails in this examination he will be given the option of being immediately honorably discharged from the service or of serving out his enlistment.

The practical examination at the school will be under the direction of the torpedo board and will cover a period not to exceed two months, during which time the applicant will be given a thorough practical test as to his skill in mechanical drawing and his ability to care for, use, and repair the various engines, machinery, and electrical apparatus pertaining to seacoast fortifications and their appurtenances.

Should an enlisted man fail in an examination, he will not be permitted to undergo a second examination within less than one year unless he be specially recommended therefor by the commandant of the school; should a civilian fail in his examination, he will be given the option provided for in his enlistment.

A practical examination of applicants who have passed a satisfactory theoretical examination for the position of master electrician will be held at the school of submarine defense, Fort Totten, N. Y., for a period not to exceed two months, beginning August 1, 1903. Applicants will forward their applications with necessary certificates in time to have them reach the commandant of the school on or before June 1, 1903. No application received after that date will be considered in connection with this examination.

At the close of the examination the torpedo board will make a report through the commandant to the chief of artillery showing the comparative merits of the men examined for the position and designating those who in its opinion are best qualified for appointment as master electricians.

Like examinations will be held from time to time as men are wanted for the positions, the dates of the examinations to be announced in general orders from these headquarters.

By command of Lieutenant-General Miles.

W. P. HALL,
Acting Adjutant-General.

APPENDIX E.

GENERAL ORDERS, }

No. 9. }

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
Washington, January 27, 1903.

I. By direction of the Secretary of War the Fifty-fourth Company, Coast Artillery, Fort Totten, N. Y., will hereafter be known as the "Torpedo Company," and its authorized enlisted strength is increased from 109 to 140 men. To provide for this increase 31 enlisted men of Coast Artillery (not noncommissioned officers) who have demonstrated a certain degree of mechanical skill and ability, as well as a general fitness for the performance of the skilled labor required of submarine miners, will be transferred to the Torpedo Company from other companies of Coast Artillery, under instructions to be hereafter issued by the Adjutant-General of the Army.

Whenever in the opinion of the commandant of the school of submarine defense the increased company shall have received sufficient instruction in all matters pertaining to submarine mining to admit of 83½ per cent of its enlisted strength being transferred to other posts, this fact will be reported to the Adjutant-General of the Army and a board of artillery officers convened for the examination of all men reported qualified.

The board will report to the Adjutant-General of the Army the names of the men found proficient, who will then be transferred to such Coast Artillery companies as the Chief of Artillery may recommend, and their places filled in the manner indicated in the first section of this order.

II. By direction of the Secretary of War the following scheme for the instruction, examination, and classification of gunners of the Torpedo Company is published for the information and guidance of all concerned:

1. The object of the examination is to ascertain the qualified gunners in the Torpedo Company by their absolute and relative excellence in comprehending and mastering the prescribed instruction. These examinations will take place at Fort Totten, N. Y., and at such times during the year as the Chief of Artillery, with the approval of the Lieutenant-General Commanding the Army, may direct.

2. The board of examination shall consist of three artillery officers, who shall be designated by the Chief of Artillery, with the approval of the Lieutenant-General Commanding the Army.

3. The examination for gunners will include the following subjects, with the maximum values assigned to each, as follows:

(a) Use of angle-measuring instruments	10
(b) Use of plotting board in so far as it pertains to the location of mines. . .	10
(c) Duties in the loading room as prescribed in the authorized book of instruction	25
(d) Duties on the water as prescribed in the authorized book of instruction. .	25
(e) Knots and elementary cordage	10
(f) Care and preservation of submarine-mine material	10
(g) Handling of high explosives, use of telephones, and electric-light wiring. .	10

4. The compulsory instruction of enlisted men in this course will be limited to the prescribed hours of drill and instruction.

5. The company commander will, previous to the examination, submit to the senior member of the board a list duly signed of the names of all the men of the company who may be designated for examination, with the statement that he believes that each man so designated is capable of qualifying as first or second class gunner.

6. The board will keep a record of its marks during the examination, but these marks will not be published. The record will, however, be sent to the Chief of Artillery. The report of the board to be published in orders will simply contain the names of those who have qualified as gunners, each class being arranged alphabetically, the date of the report to be recited in each case.

7. Enlisted men who obtain an average of 85 per cent of the total maximum mark at the examination will be classed as first-class gunners and those who obtain an average of 65 per cent will be classed as second-class gunners.

By command of Lieutenant-General Miles:

H. C. CORBIN,
Adjutant-General, Major-General, U. S. Army.

APPENDIX F.

*The winter loading-room practice.*Name, _____
_____ loading detachment.

Tasks.	Begun.	Fin- ished.	Time spent on task.	Date.
1. Making turks heads:				
a. Single-conductor cable				
b. Multiple cable				
2. Making core joints:				
a. Telegraph joints				
b. Inside mine or buoy				
c. Outside mine or buoy				
3. Cable joints proper:				
a. Uniting 2 single-conductor cables				
b. Uniting 2 multiple-conductor cables				
c. Uniting multiple cable and 7 branch cables				
d. Uniting branch cable and 8 mine cables				
e. Uniting branch cable to leading wire				
4. Loading cut-out plugs and boxes:				
a. Judgment firing				
b. Skirmish-line or automatic firing				
c. Main-line firing				
5. To prepare compound plug for buoyant mine:				
a. Judgment firing				
b. Skirmish-line or automatic firing				
c. Main-line firing				
6. To prepare compound plug for ground mines:				
a. Judgment firing				
b. Skirmish-line or automatic firing				
c. Main-line firing				
7. To prepare circuit regulator buoy compound plug:				
a. Skirmish-line or automatic firing				
b. Main-line firing				
8. Inserting charge in compound plugs:				
a. Buoyant mines				
b. Ground mines				
9. Inserting charge:				
a. Buoyant mines				
b. Ground mines				
10. To load and assemble a triple group of mines (buoyant and ground), making connections through triple and grand junction boxes to a core of multiple cable				
11. Attach mooring sockets to cables				
12. Insulating an exposed cable conductor				
13. Knots, splicing and strength of rope				
14. Use of the telephone				
15. Care and preservation of torpedo material				
16. Questions upon boat service				

Practical instructions will be given in the following as time becomes available:
Angle-measuring instruments, telegraphing, elements of electricity, management of boilers, engines, dynamos, and storage batteries,

APPENDIX G.

HEADQUARTERS SCHOOL OF SUBMARINE DEFENSE,
 OFFICE OF THE DISBURSING OFFICER,
Fort Totten, N. Y., October 20, 1903.

The ADJUTANT.

SIR: I have the honor to submit the following report of the operations of the torpedo depot, Fort Totten, N. Y., for the fiscal year ending June 30, 1903. The act making appropriations for fortifications and other works of defense, approved June 6, 1902, contained the following provision:

"For the purchase of submarine mines and necessary appliances to operate them for closing the channels leading to our principal seaports, and continuing torpedo experiments, \$17,000, to be expended by the Artillery Corps."

The act for similar appropriations, approved February 27, 1903, appropriated \$100,000 for the ensuing fiscal year; this sum, together with the unexpended balance from the \$17,000 above quoted, to be expended by the Ordnance Department.

Disbursements began in February, 1903, and all have been made through the Ordnance Department.

Much delay has necessarily occurred at times during the year in filling requisitions. This has been due to inexperience in starting the depot, difficulty in obtaining skilled enlisted help, and, in some instances, to inexperience in the local officers making the requisitions. All these difficulties are disappearing.

Report of receipts and expenditures.

Receipts:

By war warrant No. 5006, February 3, 1903.....	\$9,000.00
By war warrant No. 8176, May 18, 1903.....	8,000.00
	<hr/> 17,000.00

Expenditures:

Clerk hire and labor	\$291.01
Office and depot furniture and fixtures	478.87
Repairs to instruments, boats, and material	193.51
Mileage ^a	54.82
For experimental work	456.55
For issue from depot.....	4,235.76
	<hr/> 5,710.52
Balance June 30, 1903.....	11,289.48

Very respectfully,

C. J. BAILEY,

Captain, Artillery Corps, Disbursing Officer.

APPENDIX H.

HEADQUARTERS SCHOOL OF SUBMARINE DEFENSE,
OFFICE OF THE DISBURSING OFFICER,
Fort Totten, N. Y., September 12, 1903.

Special appropriation, placed to the credit of Maj. Arthur Murray by war warrant No. 2725, dated December 14, 1901.

July 1, 1902. Balance brought forward \$26,467.27

Expended:

Extra-duty pay enlisted men, July, 1902, to January, 1903.....	\$601.27
Civilian labor	2,200.81
Lumber, hardware, plumbing, etc.....	10,870.20
Books for library	482.89
Drawing material	91.82
Stationery and printing office	559.95
Office furniture	1,059.74
Machinery and tools	1,691.93
Electrical apparatus	1,701.40
Chemical apparatus	304.75
Balance, June 30, 1903	6,902.51

26,467.27

Very respectfully,

ARTHUR MURRAY,

Major, Artillery Corps, Disbursing Officer.

^aSince transferred to army transportation.

APPENDIX I.

HEADQUARTERS SCHOOL OF SUBMARINE DEFENSE,
OFFICE OF THE DISBURSING OFFICER,
Fort Totten, N. Y., September 12, 1903.

The ADJUTANT.

SIR: I have the honor to submit herewith a report of receipts and disbursements of funds appropriated for the School of Submarine Defense for the year ending June 30, 1903:

Appropriation "United States service schools."

Allotted to School of Submarine Defense and placed to the credit of the disbursing officer of the school by war warrant 3692, December 16, 1902.....

\$5,247.00

Expended as follows:

Books for school library.....	973.76
Chemical apparatus, chemicals, and explosives.....	875.06
Machinery and tools for electrician-sergeants' division.....	1,731.32
Printing office and book bindery.....	364.71
Permanent fixtures for laboratories and offices, and stationery for school.....	1,133.73
Drawing material and services of draftsman.....	76.33
Electrical apparatus and supplies.....	92.09

5,247.00

Appropriation "School of Submarine Defense."

Placed to credit of disbursing officer of the school:

By war warrant No. 4374, January 8, 1903.....	\$11,500.00
By war warrant No. 8265, May 25, 1903.....	5,000.00

Total.....	16,500.00
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Expended as follows:

Incidental expenses—

Extra-duty pay of enlisted men, January to June, 1903.....	\$977.44
Pay roll of civilian laborers employed in fitting up and repairing library, laboratories, offices, and other public buildings.....	2,930.11
Material for same.....	2,139.68
Office furniture and fixtures.....	1,165.15
Machinery, hardware, boats, etc.....	1,759.07
Stationery, drawing instruments, and material.....	1,028.55
Planting mines—	10,000.00
Mine material, hardware, lumber, etc.....	1,000.00
Electricity, mines, and mechanism—	
Storage battery.....	1,127.00
Electrical apparatus, machinery and supplies.....	873.00
Chemistry and explosives—	2,000.00
Chemicals and apparatus.....	1,445.87
Explosives.....	54.13
Electrician-sergeants' division—	1,500.00
Special apparatus.....	711.74
Material.....	288.26
Library—	1,000.00
Books.....	552.76
Periodicals.....	294.29
Book bindery.....	152.95
Total.....	16,500.00

Very respectfully,

C. J. BAILEY,
Captain, Artillery Corps, Disbursing Officer.

APPENDIX J.

Proceedings of a board of officers convened at Fort Totten, N. Y., pursuant to the following order:

SPECIAL ORDERS, {
No. 136. }

HEADQUARTERS DEPARTMENT OF THE EAST,
Governors Island, New York City, June 16, 1902.

[Extract.]

* * * * *
8. A board of officers is hereby appointed, to meet at Fort Totten, N. Y., on Thursday, June 19, 1902, at 10 a. m., or as soon thereafter as practicable, to take into consideration the entire question of the alterations and improvements that should be made at that post, and submit with its report plans showing changes in existing buildings and improvements that will be required, and the new buildings that should be erected, with a map fixing the sites of the same and showing location of new roads, walks, sewer and water lines, and other improvements incident to the work.

Detail for the board: Maj. Arthur Murray, Artillery Corps; Capt. George F. Landers, Artillery Corps; First Lieut. Arthur T. Balentine, Artillery Corps.

* * * * *

. By command of Major-General Brooke:

THOMAS H. BARRY, *Adjutant-General.*

FORT TOTTON, N. Y., *June 19, 1902.*

The board met at 12 m. to-day.

Present, all the members.

The board proceeded to consider the subject referred to it in the convening order, and after careful investigation and consideration of all matters connected therewith reports as follows:

NEW BUILDINGS NEEDED.

QUARTERMASTER'S DEPARTMENT.

1. An administration building, to contain offices for the commanding officer, the adjutant, the sergeant-major, and headquarter clerks; a printing and binding room; a room for torpedo depot officer, school board, and torpedo board, with an adjoining clerk's room; a draftsman's room; a quartermaster's and commissary's office, with an adjoining clerk's room; a general court-martial and officers' school-room; an ordnance officer's room, with an adjoining clerk's room; a signal and engineer officer's room; a telegraph and telephone office; a room for musicians of guard and orderlies, and a post-office. [A rough floor plan of such a building as is needed has already been furnished the Quartermaster's Department.]

2. An exchange, post library, gymnasium, and post school building. [In case the recommendation made by the board under the heading, "Changes in existing buildings" is approved, a building for use only as a post library and post school will be needed.]

3. A steam-laundry building, the laundry to be operated by the post exchange.

4. A company barracks. (There are now four barracks at the post, occupied by five companies and the electrician-sergeants' class. Four companies constitute the artillery complement of the post, under General Orders, No. 126, Adjutant-General's Office, 1901, and in addition to this, one company is needed at the school for torpedo work only. An additional barrack is needed to accommodate the torpedo company.)

5. Six single sets of officers' quarters: one for the commanding officer, one for the senior surgeon, one for each of the three instructors of the school, and one for the torpedo-depot officer. (The senior surgeon and the senior instructor are majors, and the other two instructors and the depot officer are captains.)

6. Eight double sets of officers' quarters, for married company and student officers.

7. A bachelor officers' building, to contain eight sets of quarters, without messing facilities. (Ample messing facilities are already provided for use of bachelors in a building used jointly as an officers' mess and a school library.)

8. Nine double sets of noncommissioned officers' quarters, for use of sergeant-major, post noncommissioned staff, electrician sergeants on duty in connection with depot and school, and specially deserving married company noncommissioned officers.

9. A stable with stalls for 30 horses.

10. Two bathing houses, one for officers and one for enlisted men.

MEDICAL DEPARTMENT.

1. A hospital with 36 beds and an isolation and a prisoners' ward.

2. A hospital-steward's quarters.

ENGINEER DEPARTMENT.

1. A torpedo-loading room and storage shed, for use in connection with torpedo instruction at the school. (The building now used for this purpose is an old, ramshackly, frame structure—one of the numerous eyesores of the post.)

2. A boathouse, for storage of naphtha launch and yawls used for instruction purposes. (The building now used for the purpose was built some years ago, when experiments were being made with the Sims-Edison dirigible torpedo, and is unsuitable, unsafe, and badly located for the purpose for which such a house is now needed.)

3. Two torpedo-depot storehouses, one for instruments and delicate apparatus, the other for heavy torpedo material. (The storehouses heretofore used as depot buildings are a considerable distance from the wharf where new depot material is landed, and this has necessitated the use of wagons and teams for hauling material to and from the wharf. It is now proposed to erect storehouses near the engineer storehouse for fortification material and use the railway in vicinity for transfer of material to and from depot storehouses. The storehouse formerly used should be turned over to the quartermaster and commissary for use as a quartermaster shop and a commissary storehouse.)

4. A torpedo-depot repair shop. (The shop heretofore used for repair of mine cases and larger parts of mining material was not turned over as a depot shop when the engineer battalion left the post, but was held by the engineer department as a repair shop for fortification material. A shop in which smaller parts of torpedo material were heretofore repaired was turned over to the artillery by the engineers; but this building is not large enough for all purposes for which a repair shop is wanted, and is besides not located where it should be for work to be done. It should be converted into a commissary office building and storehouse, for which it is well adapted and fairly well located.)

5. An electric-power plant building. (It is understood that the engineers have contemplated establishing a complete modern power plant at this post for some time past. Now that the School of Submarine Defense has been located at the post a complete plant should be put up at the earliest practicable moment, not only to furnish light and power for the fortifications, post, and school, but for use in connection with the instruction of officers and enlisted men at the school.)

SITES.

Accompanying this report are three maps indicating the sites selected for new buildings recommended, and also showing the location of the new roads, walks, sewers, and water lines. The map marked "Exhibit A" shows the post as at present laid out; that marked "Exhibit B" is the same map with the proposed improvements indicated thereon; and that marked "Exhibit C" is a map of the post as now proposed, and showing only those buildings, roads, etc., recommended by the board to be retained, together with new buildings, roads, etc., whose construction is recommended.

An examination of the proposed location of the new buildings, as shown on Exhibit B, will show that the sites are immediately available for the erection of nearly all of the new buildings and that there need be no delay in beginning the work for lack of sites.

On the sites selected for the administration and bachelor officers' buildings are two old and dilapidated frame buildings which were formerly used as quarters for engineer officers or their civilian assistants engaged on the fortifications at this place. As one of these buildings is now vacant, and the other is merely used as a temporary office for the engineer foreman engaged in work on the post, and as

both are practically ready to tumble down of their own accord, it is not thought that any serious objection to their immediate removal will be made by the engineer department, especially as they occupy two choice building sites, located on the main road entering the post, and as the sites they occupy are now needed for more important buildings. In case the engineers desire to build quarters for an officer here, it is recommended that they be built alongside the quarters of the instructors on the site indicated on Exhibit B.

On the sites selected for two of the six single sets of officers' quarters are two small story-and-a-half frame buildings, now occupied by the ordnance sergeant and the electrician sergeant of the post. If the building heretofore used as a photograph gallery is converted into two sets of noncommissioned officers' quarters, as hereinafter recommended, the sergeants referred to can be moved into these quarters and the houses they now occupy removed.

On the sites selected for four of the eight double sets of officers' quarters are old frame buildings that can not be removed until the new administration building and other quarters for the officers and noncommissioned officers which now occupy the old buildings referred to are built.

On the sites selected for three of the nine double sets of noncommissioned officers' quarters the new company barracks, the stable, and the storehouse and loading rooms for use in connection with the school are old frame buildings, which can be removed at once.

CHANGES IN EXISTING BUILDINGS.

QUARTERMASTER'S DEPARTMENT.

1. The rear part of the south wing of the officers' mess building should be raised one story, and a servants' room and a bathroom be built in addition. By then making a suitable outside entrance to the rooms in the second story of this wing two complete and excellent sets of bachelor quarters can thus be made at comparatively little cost. The north wing of this building is now being overhauled and put in good order for use as a school library. The remainder of the building should be repaired and put in thorough order for use as a bachelors' mess. The post quartermaster has been instructed to put in special estimates for this work with a view to getting it done as soon as possible, as the mess is now being run under very unsatisfactory conditions, and the additional set of quarters will be badly needed when the new officers' class reports here on October 15 proximo.

2. The three barracks formerly occupied by the engineers are badly in need of a thorough overhauling and repairing. The plaster ceilings of first floor and basement should be replaced by metal ceilings; the floors and stairs of buildings should be replaced by first-class modern material.

3. The mess building for the three barracks just referred to is in exceedingly bad repair, and is in every way unsatisfactory for use as a mess room and kitchen for the companies occupying the barracks. It is therefore strongly and urgently recommended that separate mess room and kitchens be built as additions to each of the three barracks, as indicated on the accompanying map, and that the present mess building be converted into a post exchange and amusement room, for which purpose it is admirably suited.

4. The large round frame building heretofore used by the engineers as a modeling house in cold weather should be converted into a gymnasium by putting in a wooden floor, lining the side walls with brick, and putting in windows and suitable doors where necessary.

5. The fireproof brick building in rear of guardhouse formerly used as an engineer depot storehouse should be converted into a quartermaster's shop and tool building and storehouse by means of partitions and by cutting windows in buildings wherever additional light is necessary. (The present quartermaster's storehouse and quartermaster's workshops are located on opposite sides of the post. A worse arrangement for working purposes would be difficult to conceive.)

6. The fireproof brick buildings heretofore used as an instrument repair shop and an instrument storehouse should be converted into a commissary office and store and a commissary storehouse, respectively. (The present quartermaster's and commissary office and storehouse building is not large enough for the increased size of the garrison. The above arrangement would enable this building to be used as a quartermaster's office and storehouse only, and would locate the commissary buildings nearer the main portions of the garrison, though at a greater distance than at present from the quartermaster's wharf. The extra hauling thus

entailed would be of little consequence, however, compared with the getting of two such excellent brick buildings for purposes recommended.)

7. An outside entrance should be made from the front of the barracks, now occupied by the Torpedo Company, to the closets in the basement. (This entrance would be a great convenience and would prevent much mud tracking through the main hall of the barracks.)

8. The frame building heretofore used as a photographic gallery should be converted into a double set of noncommissioned officers' quarters. (The building is comparatively new and could easily be adapted to purpose stated.)

9. Shingle roofs should be put on the frame storage shed in rear of guardhouse, and on a similar shed near site selected for a new stable.

10. The building heretofore used as a pontoon wagon storage shed should be converted into a post wagon shed, for which it is well adapted.

11. The present commanding officer's quarters should be converted into four sets of bachelor quarters of two rooms and a bathroom each, by building three additional bathrooms, which can readily be done. If all woodwork in basement is then torn out and the floor concreted, the present insanitary condition of the building will be remedied, and the building will undoubtedly answer well for purpose stated for a decade or more.

ENGINEER DEPARTMENT.

1. The Torpedo Company laboratory and dynamo house should be overhauled and put in good repair. A concrete passageway should be built around both buildings on hill side, and basement walls should be well cemented to stop present bad leakage; the boiler room should be enlarged, and an outside entrance should be made to it; a concrete passageway between two houses should be built; the floor of the engine and boiler room should be concreted, and water should be installed in the building.

IMPROVEMENTS.

In addition to the new roads and walks and the changes in sewer and water indicated on the accompanying map, the following general improvements are recommended:

1. That the parade ground be leveled, and that the earth removed therefrom be used in filling and grading adjacent rough and uneven ground.

2. That all unsightly trees on the reservation be removed, and that the rough ground on the post be graded or terraced as fast as practicable.

3. That the fresh-water pond on post used for supplying fresh water to cable tanks in summer and for harvesting ice for post in winter be cleaned, deepened, and surrounded with a cement wall and supplied with proper overflow and drainage pipes.

4. That the sea wall on northeast of reservation, which now ends near the mouth of Little Neck Bay, be extended as fast as funds are available or may be appropriated therefor until the whole of the reservation bounded by the bay is surrounded by a sea wall at the low-water line.

5. That the marsh land on the opposite side of the slough which forms the southwest boundary of the post be bought, and that the slough be dredged and diked, the mud and earth removed being used to reclaim the marshy land, and thus convert a mosquito-breeding and malarial pest hole into a most desirable post garden. The land recommended to be bought is indicated on the accompanying map. If the recommendation to buy this marsh land is not approved, the slough should be dredged and diked, the earth removed being used, as stated, to reclaim the marsh land now owned by the Government, and which has long been considered responsible for much of the malaria for which this post is noted.

ORDER IN WHICH WORK SHOULD BE DONE.

New buildings for which sites are now available and upon which work should be begun at the earliest possible moment:

QUARTERMASTER'S DEPARTMENT.

The administration building.
The bachelor officers' building.

Four single sets of officers' quarters.
 Four double sets of officers' quarters.
 Five double sets of noncommissioned officers' quarters.
 The laundry building.
 The company barracks.
 The stable.
 The two bath houses.

MEDICAL DEPARTMENT.

The hospital.
 The hospital stewards' quarters.

ENGINEER DEPARTMENT.

The torpedo loading room and torpedo shed.
 The boathouse.
 The two torpedo depot storehouses.
 The torpedo depot repair shop.
 The electric power house.
 Existing buildings on which changes recommended can and should be begun at once:

QUARTERMASTER'S DEPARTMENT.

The officers' mess building.
 The three-gun company barracks.
 The torpedo company barracks.
 The modeling house.
 The photograph gallery. (As soon as alteration in this building is completed, work on the last two of the six single sets of officers' quarters can be begun.)
 The fireproof building in rear of guardhouse.
 The frame storage sheds in rear of guardhouse and near or on site for new stable.
 The pontoon wagon shed.

ENGINEER DEPARTMENT.

The torpedo company laboratory and the dynamo house.

IMPROVEMENTS WHICH CAN AND SHOULD BE BEGUN AT ONCE.

New sewers and water-pipe lines.
 New roads and walks.
 Leveling of parade ground,
 Removing of unsightly trees and grading of rough ground.
 The cleaning, deepening, and walling of fresh-water pond.
 The extending of sea wall on northeast side of reservation.
 New buildings, which should be begun as soon as change in photograph gallery is completed:
 Two single sets of officers' quarters.
 New buildings which should be begun when new buildings to be begun at once are completed:
 Four double sets of officers' quarters.
 Four double sets of noncommissioned officers' quarters.
 Existing buildings in which changes recommended should be made when new buildings are completed:
 The present commanding officers' quarters.
 The present company mess building.
 The instrument repair shop and instrument storehouse.
 Improvements which should be made when money therefor is available:
 The completion of the sea wall on Little Neck Bay.
 The purchase of marshy land adjoining post, the reclaiming of this and marsh land now on reservation.
 The grading and filling of all rough and unsightly ground on the reservation.

GENERAL REMARKS.

It will be at once seen and understood that in preparing this report the board has endeavored to keep in mind what is believed to have been contemplated by higher authorities when the board was convened, and that is not merely the making of makeshift improvements which might answer after a fashion for the time being, but rather a complete rearranging, remodeling, rebuilding, and improving of the post in such a substantial manner as not only to fill the principal and most crying needs of the post, the school, and the depot for years to come, but also to render the place a credit to all in any way concerned in its rehabilitation, and be really cheaper to the Government in the end.

The board therefore recommends that all new buildings to be erected, except the boat and bath houses, be of brick with stone foundations; that the principal walks be made of concrete; that the main roads be provided with vitrified-brick gutters and stone curbing, and that the main sewer pipes be of iron.

In regard to stone for foundations, it is believed that the granite blocks which were brought here in the days of stone fortification and are now scattered promiscuously in the vicinity of the engineer storehouse for fortification material, would, if broken up, furnish sufficient stone not only for buildings to be built by the engineers, but possibly for those to be built by the quartermaster as well. These granite blocks are now a serious detriment to the proper police of the post, an incumbrance on ground that is specially needed for building purposes, and if they are used as recommended they will not only prove of value to the Government, but a grievous eyesore will be gotten rid of at the same time.

In connection with this report it may be stated that at the request of the president of the board, Mr. Clinton Smith, chief constructor in the Quartermaster-General's office, visited the post, went personally over the ground, considered and discussed all matters reported upon, and that the report as now submitted received his unqualified approval. In case any further or more detailed information is desired in the Quartermaster-General's office regarding the various matters reported upon and recommended by the board, it is particularly recommended that Mr. Smith be consulted upon the subject.

ARTHUR MURRAY,
Major, Artillery Corps, President.

GEORGE F. LANDERS,
Captain, Artillery Corps, Member.

ARTHUR T. BALENTINE,
First Lieutenant, Artillery Corps, Recorder.

**REPORT OF THE CHIEF OF THE RECORD
AND PENSION OFFICE.**

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**REPORT OF BRIG. GEN. F. C. AINSWORTH, U. S. ARMY, CHIEF OF
THE RECORD AND PENSION OFFICE.**

RECORD AND PENSION OFFICE,
War Department, September 26, 1903.

SIR: In submitting my annual report for the fiscal year ended June 30, 1903, I beg leave to state that, as usual, since the organization of the Record and Pension Office, the public business has been promptly dispatched, 92 per cent of the cases received having been disposed of within twenty-four hours from the time they reached the Office, and at the close of business on the 30th of June, as on the last day of every fiscal year during the existence of the Office, not one case remained unacted upon. This result has been accomplished by the adoption of approved business methods and the unremitting labor and earnest cooperation of the clerical force.

The current work for the last fiscal year is represented in part by the following table:

Number of cases received and disposed of.

From the Pension Office	78, 686
From the Auditor for the War Department	21, 192
Remuster cases.....	1, 991
Desertion cases.....	1, 987
All other cases, miscellaneous.....	37, 604
Total.....	141, 460
On hand June 30, 1903.....	None.

In addition to the cases referred to above, 11,707 informal calls were received from the Quartermaster-General of the Army for information for use in connection with applications for headstones to mark the graves of deceased volunteer soldiers, and about 1,650 from the Adjutant-General of the Army for the records of former officers of volunteers applying for appointment in the Regular Army or to determine the relative rank of those already appointed, and for the records of former volunteer soldiers with a view to their enlistment in the Regular Army or to establish their title to longevity pay; making a total of about 154,817 cases received and disposed of by the Record and Pension Office during the fiscal year.

The pension cases referred to in the statistical table were of the usual variety, consisting of calls from the Commissioner of Pensions for information relative to the service or medical treatment of officers and enlisted men of the disbanded volunteer forces, or information

relative to their status in the service. Classified by wars, they were as follows: Philippine insurrection, 1,680; war with Spain, 14,965; other wars (principally the war of the rebellion), 62,041.

The cases from the Auditor for the War Department, consisting of calls for statements of service of officers and enlisted men, or for specific information relative to their service or status, classified by wars, were: Philippine insurrection, 2,582; war with Spain, 1,794; other wars (principally the war of the rebellion), 16,816.

REMUSTER.

The "remuster" cases referred to in the statistical table have frequently been described. They are applications for recognition of rank as commissioned officers during the civil war, under the provisions of the act of February 24, 1897, "for the relief of certain officers and enlisted men of the volunteer forces." Upon the action of the War Department in granting recognition of rank depends the action of the Treasury Department in its allowances of pay and emoluments and the action of the Interior Department in determining the pensionable status of claimants for the benefits provided by the act. The War Department, while exercising due care for the public interests, has always interpreted this act and the similar legislation that preceded it in the liberal manner in which beneficial legislation should always be construed; but the rulings of the Department have not been sufficiently liberal to meet the views of certain interested claim agents, who have carried a number of cases to the Court of Claims, and in one case a decision was recently rendered so far-reaching in its consequences and so directly in conflict with the rulings of the Department that the Secretary of War has deemed it advisable to ask for an appeal to the Supreme Court.

It may be stated here that the number of remuster cases is gradually diminishing and that, unless a new principle of action shall be established by the courts, the work of readjusting the records of volunteer officers and enlisted men of the civil war under the remedial legislation referred to is probably nearing its close.

DESERTION CASES.

The acts of Congress (the act approved March 2, 1889, and the acts amendatory thereof) relating to the removal of charges of desertion are applicable only to soldiers of the civil war and the war with Mexico. Like the "remuster" cases, the number of applications for relief under these acts is becoming gradually less as the period of service becomes more remote. However, to the nearly two thousand cases shown by the statistical table to have been received and disposed of during the fiscal year should be added a large number of cases in which the charge of desertion, incidentally discovered, was considered under the statutes without an application therefor.

MISCELLANEOUS CASES.

The cases classed in the statistical table as "miscellaneous" are of great variety and represent the general correspondence and administrative action of the office. During the past fiscal year the corre-

spondence of the office has been fully up to the average of the fourteen years of the existence of the Record and Pension Office and considerably above the average of the last ten years.

CERTIFICATES OF MERIT AND MEDALS OF HONOR.

The practice of the Department with regard to the issue of certificates of merit and medals of honor is of interest to a large number of persons formerly of the volunteer service, and as this practice was modified to some extent during the fiscal year, especially with regard to the issue of medals of honor, in which former members of the volunteer forces are more particularly interested, it is deemed proper here to insert a brief statement of the decisions of the Secretary or the Acting or Assistant Secretary of War on the subject. These decisions are to the following effect:

A certificate of merit can only be granted upon a recommendation therefor made, while the person to whom the grant of the certificate is recommended was in the military service of the United States as an enlisted man, by the officer who, at the time such enlisted man distinguished himself, was commanding the regiment, or was chief of the corps to which the enlisted man belonged.

The word "corps" as used in section 1216 of the Revised Statutes, as amended by the acts of Congress approved February 9, 1891, and March 29, 1892, is construed to mean any staff corps or department of the Army.

Unless the officer in immediate command of a regiment at the time an enlisted man thereof distinguished himself has specifically recommended the award of a certificate of merit to that man, such a certificate can not be granted to him upon the recommendation of any superior commander or of any other officer.

When an officer, noncommissioned officer, or private in the military service of the United States has most distinguished himself in action, a medal of honor can be awarded to him, regardless of whether he is in the military service or not, provided that an application or recommendation for the award of the medal to him was made while he was in the military service.

A medal of honor can not be awarded to a person not in the military service of the United States for most distinguished service formerly rendered by him as an officer, noncommissioned officer, or private unless an application or recommendation for the award of a medal to him was made while he was in the military service.

INDUCTION OF STATE MILITIA INTO THE MILITARY SERVICE OF THE UNITED STATES.

In the transaction of the current business of the office and the compilation of the records of individual military service by the index-record card system, questions are constantly arising relative to the status of officers and enlisted men and the organizations to which they belonged. It frequently becomes necessary to determine whether or not an individual or an organization was in the military service of the United States. The practice of the Department with regard to volunteers and the volunteer service generally has become so well established that there is seldom any difficulty in determining whether any particular volunteer organization or any particular member of it was or was not in the United States military service, but until recently there was not the same certainty with regard to the status of State militia under call by the President, and cases frequently arose in which there was considerable doubt and uncertainty as to whether certain militia organizations or certain members thereof could be regarded as having been lawfully in the military service of the United States or not, or if in that service when and by what particular act they were inducted into

the service. The question was, "What is necessary to induct State militia into the military service of the United States under a call by the President?"

It has indeed been the practice of the United States from a very early period in its history to cause such militia troops to be inspected and mustered into its own service by its own agents, at rendezvous of its own selection, the mentally or physically infirm being rejected; and it has also been uniformly held by the War Department that the act of muster in marked the transition from the State service to the service of the United States, the persons rejected by the United States mustering and inspecting officer not being recognized as having been in the service of the United States at all. A different view has obtained and been applied in certain cases by officials not connected with the War Department, and in order that the practice of the War Department might be settled upon a satisfactory foundation the question was referred by the Secretary of War to the Attorney-General, who expressed the opinion that the date of muster in fixes the time of entry into the United States service, and that the practice of the War Department to regard militia organizations and their members as not in that service until the date of muster in is amply supported by the decisions of the Supreme Court and the opinions of the Attorneys-General.

This opinion and the conclusions previously reached by the Chief of the Record and Pension Office on the same subject were concurred in by the Secretary of War, who directed, June 18, 1903, that the practice of the War Department be governed by them in the future. That portion of the "conclusions" which is of general application is as follows:

During the entire period of the civil war, muster in or its equivalent was necessary to induct militia into the military service of the United States.

The equivalent of muster in, or constructive muster in, in the cases of volunteers or militiamen called out by the President, is such treatment of those volunteers or militiamen by the United States, through its own agents, as clearly shows the intention of the United States to accept those volunteers or militiamen into its own service and to make them its own soldiers, free from all control as soldiers except the control of the United States. That intention is manifested by the United States placing the men on military duty, uniforming, arming, equipping, subsisting, and paying them, and taking their names up on the official rolls—in short by treating them substantially as the United States treats soldiers who have been formally mustered into its service.

OFFICIAL RECORDS OF THE UNION AND CONFEDERATE ARMIES.

Detailed accounts of the publication and distribution of the "Official Records of the Union and Confederate Armies" have been given in previous annual reports. At the expiration of the last fiscal year the distribution of the sets provided for the Senators, Representatives and Delegates of the Fifty-sixth Congress by the act approved June 6, 1900, was in progress. The distribution of that edition, which was the last edition then authorized, is now complete, with the exception of about one hundred sets for which the recipients have not yet been designated.

More than a third of a century has elapsed since the close of the war to which this work pertains, and it has long been apparent to the Department that the printing of the volumes composing it should be brought to a definite conclusion by the issue of a final edition, if any further edition was contemplated by Congress, which should be sufficiently large and distributed in such a manner as to meet all reasonable

demands for the future, thus permitting the conversion to other uses of the large and expensive collection of electrotypes and lithographic stones from which the records and maps were produced. Representations on this subject were made to Congress by the Secretary of War in 1901 and again in 1902, but it was not until its last session that Congress took any definite action in the matter. In the sundry civil appropriation act of March 3, 1903, however, the Secretary of War was authorized to furnish to each Senator, Representative and Delegate of the Fifty-seventh Congress one set of the records and two sets to such permanent libraries and educational institutions as may be designated by each member of the same Congress, using for this purpose any volumes or parts of volumes remaining unsold or unclaimed by beneficiaries previously designated to receive them; and the Secretary of War was authorized to call upon the Public Printer to print and bind such additional numbers of the several volumes and maps as may be necessary to complete the sets thus provided for. It was also provided that when the additional volumes authorized by the act shall have been printed the plates used in printing the work shall be destroyed. The work of printing and distributing the sets authorized by this act will be entered upon at an early date. It will perhaps be observed that no provision was made in the act with regard to the lithographic stones from which the maps were printed, but they are the property of private individuals and no legislation concerning them is necessary.

The distribution of the pamphlet copies of the "Additions and Corrections" to the several volumes of the war records, in progress at the date of the last annual report, has been completed. The distribution of the several parts of the publication for the fiscal year was: Books (volumes or parts of volumes), 14,106; atlases, 111; plates (maps), 203; pamphlets ("Additions and Corrections"), 11,500; total, 25,920.

The sales for the fiscal year amounted to \$155.40, which sum was deposited in the United States Treasury, as required by law.

ROSTER OF THE OFFICERS AND ENLISTED MEN OF THE UNION AND CONFEDERATE ARMIES.

The publication of the great work known as the "Official Records of the Union and Confederate Armies" has given to the world ready access to the correspondence, reports, orders and other documents of a general character pertaining to the civil war, but that compilation affords but little information relative to the individual officers and men who took part in that war. At each session of Congress bills and joint resolutions are introduced for the purpose of requiring the War Department to furnish to States copies of records of the troops furnished by them to the Union or the Confederate armies, and the War Department is in constant receipt of applications from State officials, historical societies and patriotic or memorial associations for similar transcripts of the records. To supply the States with copies of the records of troops furnished by them to the Union and Confederate armies would involve a very large expenditure of time and money, and it is doubtless for this reason that Congress has not yet authorized the furnishing of such copies at the expense of the United States.

There is no doubt that there is a very general desire on the part of the surviving participants in the great struggle in which the country was engaged from 1861 to 1865, and on the part of their descendants

and the descendants of those who have passed away, for a publication that shall show the names of those who, either as officers or enlisted men, bore arms for the Union or for the Confederacy during the great war.

It was upon these considerations that the Secretary of War, in a report made by him to the chairman of the Senate Committee on Printing, December 16, 1902, recommended the compilation and publication, as a continuation of the "Official Records of the Union and Confederate Armies," of a complete list or roster of the officers and men who served in those armies during the civil war. It was felt that the publication of such a roster would be an appropriate and valuable addition to the great work that contains the history of the civil war, and that it would relieve Congress to a great extent from the demands that are being made upon it with greater urgency each year for legislation for the benefit of certain States, and that it would also have the merit of giving to the service of the enlisted man a public recognition that has heretofore been reserved almost exclusively for commissioned officers.

The recommendation of the Secretary of War was adopted to the extent of authorizing and requiring the compilation of a complete roster of the officers and enlisted men of the Union and Confederate armies. The legislation requiring such a compilation was embodied in the legislative, executive and judicial appropriation act approved February 25, 1903. The language of the provision is as follows:

That under the direction of the Secretary of War the Chief of the Record and Pension Office shall compile, from such official records as are in the possession of the United States and from such other authentic records as may be obtained by loan from the various States and other official sources, a complete roster of the officers and enlisted men of the Union and Confederate armies.

It will be observed that this legislation does not require the publication of the proposed roster, but the authority necessary to its publication will doubtless be given when the work of compilation shall have been completed, or shall have been sufficiently advanced to justify the beginning of the publication.

The War Department records of individual service in the Union armies are complete, or so far complete that it is possible to prepare a list which shall contain the name of every officer and enlisted man who was mustered into the military service of the United States during the civil war, with such pertinent facts relative to his service as may be appropriate for the proposed publication. But with regard to the Confederate part of the roster there will be great difficulty because of the incompleteness of the War Department collection of Confederate records of military service. In order that these records may be made as nearly complete as possible, and that the Confederate part of the compilation shall be correspondingly complete, a letter was addressed by the Secretary of War to the governor of each of the fifteen States from which organized bodies of troops entered the Confederate service, inviting his cooperation with the Department in an effort to make the compilation as nearly complete as it is possible to make it. These letters were dated March 16, 1903, a few days subsequent to the date of the Congressional enactment, and were in the following form:

WAR DEPARTMENT, *Washington, March 16, 1903.*

The GOVERNOR OF ————.

SIR: There is a very general desire on the part of the surviving participants of the great struggle in which the country was engaged from 1861 to 1865, and on the

part of the descendants of those who have passed away, for a publication that shall be accessible to the general public and shall show the names of those who, either as officers or enlisted men, bore arms for the Union or for the Confederacy during the great war. In the opinion that this desire is one that should be gratified, and that can be gratified, in great measure at least, by compiling and publishing, as a continuation of the publication known as the "Official Records of the Union and Confederate Armies," a complete list or roster of the officers and men who served in those armies during the civil war, this Department recommended at the last session of Congress the enactment of a law authorizing the compilation and preparation of such a roster for publication. That recommendation was followed by the enactment of a provision of law, which is embodied in the legislative, executive and judicial appropriation act approved February 25, 1903, and which is as follows:

[The legal enactment is quoted in a preceding paragraph.]

The Department is prepared to enter at once upon the work of making the compilation thus authorized, and to push it to completion as rapidly as possible. There will be little or no difficulty in making the Union part of the roster complete, but there will be great difficulty with regard to the Confederate part because of the incompleteness of the collection of Confederate records in the possession of this Department. It is of the first importance, therefore, that no effort shall be spared to secure the temporary loan to the War Department, for the purpose of copying, of any and all authentic Confederate records that can be found anywhere. Many of these records are in the possession of the various States and it is hoped will be made readily accessible, but there are others that are widely scattered among historical and memorial associations and private citizens. The problem of how to find and procure the loan of these scattered records is a difficult one, but it is one that must be solved in order that the Confederate soldier shall receive the full credit that is due him in the roster that is to be compiled.

I earnestly invite your cooperation with the Department in an effort to make this compilation as nearly complete as it is possible to make it, and I shall be glad to have the benefit of any suggestions that you can make as to the manner in which that end can be best attained. The work will be in the immediate charge of Brig. Gen. F. C. Ainsworth, Chief of the Record and Pension Office of this Department, and I beg leave to suggest that, if the plan herein outlined meets your approval, you designate some official of your State to communicate with him relative to the details of the work and the steps to be taken in furtherance of it.

Very respectfully,

ELIHU ROOT, *Secretary of War.*

The responses received from the governors addressed have been approving and cordial, and are such as to assure the Department that the chief executives of the States that furnished troops to the Confederate service fully appreciate the importance and value of the work now in hand and will cooperate heartily with the Department in its effort to give to the Confederate soldier, as far as it may be possible, the credit that is due him in the proposed publication.

In accordance with the suggestion of the Secretary of War, each of the governors addressed, with the exception of those of the States of Maryland, Missouri and Virginia, has appointed a representative to correspond with the Department relative to the details of the work and the steps to be taken in furtherance of it.

Upon the receipt of designations by the governors of the persons selected to represent them in their correspondence with the War Department relative to the compilation of the roster, letters were addressed, by the direction of the Secretary of War, to such State representatives, outlining the plan adopted by the Secretary for procuring the missing records for the use of the Department. This plan is illustrated by the following extracts from one of the letters referred to:

A considerable collection of the rolls of Alabama Confederate organizations is now in the possession of this Department. While that collection does not by any means show all the names of the officers and men who were in the Confederate service from Alabama, and while it does not show the complete military histories of those whose names it does show, it is hoped that the list of names and the histories of

individual officers and men can be made much more nearly complete by record evidence obtainable from other original rolls that may now be in the possession of the State of Alabama, or of historical societies, memorial associations and individuals of Alabama and other States.

The legislation authorizing the compilation of the roster is construed by the Department to restrict it, in making the compilation, to the use of *original* records made during the war period, and to preclude the use of printed or manuscript copies or compilations made subsequently. For this reason, and in order that there shall be no ground for doubt as to the accuracy of the proposed roster, the Department will be unable to use in the compilation any of the rosters that have heretofore been published, but must in all cases seek the original records upon which those rosters were based.

You will readily see that, in order that the compilation now in progress shall be as nearly complete as it is possible to make it, it is essential that the War Department shall obtain the temporary loan, for the purpose of copying, of any original official rolls, lists or other documents that show the names of Confederate officers and men and that are now in the custody of State officials, historical or memorial associations, public or private libraries, or that are in the possession of private citizens.

It is impracticable for the War Department to communicate with the various holders of these scattered records, and consequently the Department must rely upon each State to collect, by loan or otherwise, such records of its own or other Confederate organizations as may be obtainable within the State, and to forward the collection when completed to this Department, by which the records will be copied and returned to the State with the least possible delay. Of course, the express charges incident to shipping records to and from the State will be defrayed by the Department.

Permit me to suggest, if the plan herein outlined meets with your approval, that you take such steps, through the public press and otherwise, as you may deem to be advisable and proper to give the plan wide publicity, and to enable you to gather together all original Confederate records that can be collected in your State by loan or otherwise.

If it occurs to you that a different plan from that indicated herein should be adopted, or if during the progress of the work you can make any suggestion tending to facilitate or improve it, you will confer a favor upon the Department and myself by advising me freely and fully with regard to your views.

The War Department plan as outlined above met the general approval of the State officials, some of whom, however, have suggested that to make the Confederate part of the roster approximately complete the data to be obtained from the existing official records be supplemented by unofficial lists and by information furnished from memory by surviving officers and men. In considering this suggestion the Secretary of War has concluded that, under the law authorizing the compilation, the Department can use as a basis for the compilation only original records made during the war period, it being the manifest intention of Congress that the roster, like the Official Records of the Union and Confederate Armies, shall be a compilation of official data, and that its accuracy shall not be subject to question by reason of its including data from unofficial sources or from the fallible and uncertain memories of a long-past period. While this adherence to contemporaneous official records of the war period as a basis for the roster may result in its being somewhat incomplete, it is believed that the loss thus occasioned will be far more than compensated for by the removal of all doubt as to the absolute accuracy of all that the roster does show. The fact that the Confederate part of a roster, compiled as the law requires this one to be, may not contain the name of some particular person will not be conclusive evidence that that person did not serve in the Confederate army, while the fact that the name of any person is borne on the roster will be indisputable evidence that that person was in the military service.

The publication known as the Official Records of the Union and Confederate Armies might have been made more nearly complete, and per-

haps more interesting, if it had included unofficial documents or reports made from memory, after the close of the war, by participants in the great struggle. It is universally conceded, however, that the chief value of that publication is due to the fact that it is an unbiased presentation of the showing of contemporaneous records made during the war period, and that it contains nothing against which can be urged the well-known fallibility of the human memory, the natural desire to extenuate or explain past actions in the light of subsequent events, and the general disposition to make the records show what one thinks they ought to show in justice to himself, his friends or his acquaintances. The application of the same rule to the recently authorized roster is believed to be necessary in order that effect shall be given to the manifest intent of Congress that the compilation shall be one upon which future generations can rely as a source of historical information of undoubted accuracy.

A question has arisen as to the payment of the representatives designated by the governors to cooperate with the Department in the collection of the missing Confederate records, but it has been pointed out that there is no authority of law for the employment in the compilation or in the necessary preliminary work of any persons other than the regular employees of the Record and Pension Office; that there is no fund from which other persons can be paid for their services, even if they were appointed or employed on the work; and that it was for these reasons that it was suggested by the Secretary of War to the governors addressed on the subject that they should designate to confer and cooperate with the Chief of the Record and Pension Office persons who are in the service of their States and already in receipt of salaries. It was assumed that by thus utilizing the services of State officials the necessity for paying salaries for work done in connection with the roster would be obviated, and that it would not be necessary for the States to incur any material expense in gathering up such original Confederate records as can be found within their borders, because the War Department can, and does, pay all expenses of transporting the records to Washington and returning them to the persons from whom they are received.

So far as the War Department is advised, the proposition to publish a roster of the Union and Confederate armies has been well received in all sections of the country. The Department has not been advised of any expression on the subject by any organized body of Union veterans, but at the meeting of the Confederate veterans at New Orleans in May last a resolution was unanimously adopted commending the work and urging upon all Confederate soldiers and their descendants who have in their possession any original records containing the names of Confederate soldiers to send them to the governors of their respective States for transmission to the Secretary of War.

It is early yet to look for any extended results from the initiatory steps taken for the collection of missing records, but the work done is already bearing fruit, a considerable number of original records having been received from State officials, historical associations and private individuals. These records have been copied and returned to the persons from whom they were received.

The actual work of compiling names for the roster can not be undertaken until the preliminary work of copying and indexing the Confederate records, which is now in progress, shall have been completed, or

until it shall have been so far advanced as to justify the diversion of a portion of the clerical force for that purpose. Relatively little work in preparation for the compilation of the names of the officers and enlisted men of the volunteer forces of the Union army will be necessary, that work having been accomplished in the completion of the much greater work of reproducing their individual military records by the index-record card system.

INDEX-RECORD CARD WORK.

During the fiscal year the work of reproducing, by the index-record card system, the records of individual military service was continued, with satisfactory results. Progress was made in carding the miscellaneous records of the civil war, newly received records of the war with Spain were reproduced, and the reproduction of the service records of volunteers in the Philippine insurrection was finished, with the exception of the few miscellaneous records that may hereafter be received. The Union records of paroled Confederate prisoners of war were also carded, and the carding of the muster rolls of Confederate troops was begun.

Since the close of the fiscal year the carding of the records of Confederate prisoners in Federal prisons has been begun and the carding of the service records of Confederate officers and enlisted men has been continued.

In the reproduction of the rolls of volunteer organizations in service during the Philippine insurrection an effort was made to complete, from other official sources of information, such incomplete individual records as were encountered, and to determine the correct record in cases where discrepancies were found to exist. This has been done at the cost of considerable labor, much of it of an administrative nature, but it is believed that this will be fully compensated for by the saving of time and labor in answering future calls for statements of service.

The carding of the Confederate service records was begun before the passage of the act requiring the compilation of a roster of the officers and enlisted men of the Union and Confederate armies. It is, however, a necessary preliminary to the preparation of the roster. Considerable progress has already been made in the work, and in view of its newly acquired importance it will be carried forward as rapidly as circumstances may permit. It is probable, however, that the completion of the work will be somewhat delayed by the absence of records which the Department is now making a special effort to procure, as mentioned in another portion of this report.

The index-record card work of the last fiscal year included the preparation of 1,330,255 military cards and 10,234 medical cards, making, with the number previously prepared, a total of 44,389,429 of the former and 7,787,163 of the latter class, aggregating 52,176,592 index-record cards prepared up to and including June 30, 1903.

RECORDS OF THE REVOLUTIONARY WAR AND THE WAR OF 1812.

By an act of Congress approved July 27, 1892, it was required that the military records of the Revolution and the war of 1812 then on file in the Treasury and Interior Departments be transferred to this office, to be preserved and properly indexed and arranged for use; and by an act approved August 18, 1894, it was directed that all military records

of the armies of the Revolution and of the war of 1812, then in any of the Executive Departments, be transferred to the Secretary of War, to be preserved, indexed and prepared for publication.

Under this legislation large collections of records have been transferred from the State, Treasury and Interior Departments, and are now on file in this office with similar records previously filed in the War Department. All of these records have been indexed and arranged for use, as required by the statute. Considerable progress has also been made in preparing them for publication, but this work was interrupted by the pressure of business growing out of the war with Spain and the insurrection in the Philippine Islands.

It is of the first importance that when the records of the Revolutionary war and the war of 1812 are published the Department's collection of them shall be as nearly complete as it is possible to make it, and much remains to be done to complete the file of records of the war of the Revolution. Many such records are known to be in the possession of the various States, historical societies, and public and private libraries. Efforts have been made to obtain copies of some of them, with gratifying results, but these efforts have necessarily been suspended, for reasons which have already been stated.

It is hoped that, notwithstanding the pressure of other business, the work of preparation for the publication of the records of the old wars can be resumed at a not distant date. It is to be stated in this connection that no specific legislation has yet been enacted by Congress authorizing the publication, but the necessary authority for publishing the records will doubtless be given as soon as the preliminary work of preparation shall have been completed.

RECORDS OF OTHER WARS.

The publication of the Official Records of the Union and Confederate Armies has given to the world the information contained in the military records of a historical nature relating to the civil war, and the publication of the roster of the Union and Confederate armies will make generally accessible all that is of public and much that is of private interest relative to the personnel of the opposing armies.

It is believed that the historical records and rosters of the armies, not only of the Revolution and the war of 1812, but of all the wars in which the country has been engaged preceding the civil war, should also be published, and that this publication should be under the auspices of the War Department. The publication of the records of the several Indian wars and the war with Mexico would follow naturally after the publication of the records of the civil war and the proposed publication of the records of the Revolution and the war of 1812, and it is believed that, with the experience acquired by the Record and Pension Office in connection with the publication of the records of the civil war, such a publication as that now proposed could be prepared without any increase of the clerical force and without expense, in addition to the usual current expenses of the Office, other than the cost of printing and binding.

Many historical papers relating to the early wars are known to be filed in the various Departments of the Government, and those in the War Department are scattered through the books and files of different bureaus and offices. These widely scattered records should be brought together, in one place, in the War Department, with a view to their

publication, and it is suggested that, until they shall have been published, the rules of the War Department denying access to the records by persons not officially connected with the Department be so far relaxed at the proper time as to permit the exhibition of these historical papers to persons desiring to consult them for literary or historical purposes, care being taken to discriminate between records of general historical interest and those of a purely personal nature, so that both public and private interests may be protected.

A difficulty in the way of immediately carrying out this suggestion is found in the fact that there is no space in the Department building known to be available for the purpose of bringing the records together and making them accessible to persons who may desire to consult them. Provision should therefore be made, if this suggestion is approved, for the storage, arrangement and exhibition of the records and for the accommodation of visitors.

For the reasons stated, and especially in view of the interest manifested by the many patriotic associations and the general public in matters relating to the military history of the country and the personnel of its armies, it is recommended that Congress be asked to provide, by legislative enactment, that all military records of a historical character relating to any war preceding the war of the rebellion, filed in any Executive Department or office, or in the custody of any public official, be transferred to the War Department, there to be preserved, indexed and prepared for publication.

LEGISLATION FOR THE RELIEF OF DESERTERS AND DISMISSED OR DISHONORABLY DISCHARGED OFFICERS AND ENLISTED MEN.

Since the close of the civil war Congress has enacted for the relief of officers and enlisted men many laws the constitutionality and propriety of which may well be questioned. The class of legislation referred to is that in which Congress undertakes to nullify the proceedings, findings or sentences of courts-martial, to revoke executed orders of dismissal or dishonorable discharge, to remove charges of desertion or to substitute honorable for dishonorable discharges.

Aside from any question as to its constitutionality, this legislation is objectionable because it undertakes to accomplish the logically and physically impossible, and because it falsifies the records by declaring by legal enactment that things that were done were not done and that things not done were in fact done.

The responsibility for this class of legislation rests primarily with the War Department, because, before Congress began to enact such laws, it was the practice of the Adjutant-General's Office, in disposing of cases of the character in question, to issue orders in which it was attempted to accomplish the impossible things for which the intervention of Congress is now obtained. In this way, and by its recognition by the Executive Department of the Government, the indefensible course which the Government has pursued has obtained such a foothold that it seems to be difficult to remedy the evil except by substituting for the illogical language of the legislation in its most objectionable form other less objectionable though admittedly unsatisfactory language.

If the legislation under consideration be examined in its various aspects, these questions suggest themselves:

1. As to its constitutionality in undertaking, directly or indirectly, to set aside in certain cases the executed legal sentences of courts-

martial or the executed legal orders issued by competent authority in cases other than court-martial cases, and the possibility of undoing in any case, court-martial or other, a fully executed act.

2. As to its relation to the pardoning power.

3. As to whether there is not a constitutional and appropriate way of granting relief in meritorious cases.

In the exercise of its constitutional power "to make rules for the government and regulation of the land and naval forces" Congress has provided a system of military courts for the trial of military offenses and has defined the punishments which such courts may award. These courts when once created become a part of the Executive branch of the Government and can not, when acting within their legal powers, be interfered with by the Judicial branch of the Government. In the case of *Dynes v. Hoover* (20 How., 65) the Supreme Court expressly recognized their independence within their own special and limited spheres. Citing the provisions of the Constitution giving Congress the power to provide and maintain a navy (this was a case arising in the Navy) and to make rules for the government and regulation of the land and naval forces, and the fifth amendment which excepts cases arising in the land and naval forces from the requirement of a presentment of a grand jury in cases of capital or otherwise infamous crime, and the clause declaring the President to be Commander in Chief, the court (through Mr. Justice Wayne) said that—

These provisions show that Congress has the power to provide for the trial and punishment of military and naval offenses in the manner then and now practiced by civilized nations; and that the power to do so is given without any connection between it and the 3d article of the Constitution defining the judicial power of the United States; indeed, that the two powers are entirely independent of each other. * * * Courts martial derive their jurisdiction and are regulated with us by an act of Congress, in which the crimes which may be committed, the manner of charging the accused, and of trial, and the punishments which may be inflicted, are expressed in terms; or they may get jurisdiction by a fair deduction from the definition of the crime. * * * What those crimes are, and how they are to be punished, is well known by practical men in the navy and army, and by those who have studied the law of courts martial, and the offenses of which the different courts martial have cognizance. With the sentences of courts martial which have been convened regularly, and have proceeded legally, and by which punishments are directed, not forbidden by law. * * * civil courts have nothing to do, nor are they in any way alterable by them. If it were otherwise, the civil courts would virtually administer the rules and articles of war, irrespective of those to whom that duty and obligation has been confided by the laws of the United States, from whose decisions no appeal or jurisdiction of any kind has been given to the civil magistrate or civil courts.

This exposition of the law has been repeatedly affirmed by the Supreme Court. (See *Ex parte Reed*, 100 U. S., 13; *Wales v. Whitney*, 114 U. S., 564; *Smith v. Whitney*, 116 U. S., 167; *Kurtz v. Moffitt*, 115 U. S., 487; *Coleman v. Tennessee*, 97 U. S., 514; *Ex parte Vallandigham*, 1 Wall., 243; *Ex parte Milligan*, 4 Wall., 123; *Swaim v. United States*, 165 U. S., 553; *Carter v. Roberts*, 177 U. S., 496; *Carter v. McClaghry*, 183 U. S., 365.)

Clearly the judicial branch of the Government can not interfere with courts-martial in the legal exercise of their jurisdiction. Can the legislative branch do so? If it can, why may it not also similarly interfere with the jurisdiction of the Federal civil courts of its creation? It creates and defines the jurisdiction of both. If it may, directly or indirectly, set aside the legal judgment of the one, why may it not of the other? Undoubtedly the legally executed judgments of the civil and military courts are equally beyond the reach of legislative action.

Courts-martial are instrumentalities of the executive branch of the Government, and what is true in this regard as to their executed sentences is equally true as to all other executed executive acts relating to the military establishment, such as the dismissal of officers and the discharge, other than honorable, of enlisted men without trial by court-martial. There is no difference whatever in this respect between legally executed court-martial sentences and other legally executed executive acts.

Judge-Advocate-General Lieber, in his Remarks on the Army Regulations and Executive Regulations in General, has said:

By virtue of its power to make rules and regulations for the land and naval forces, Congress covers a large field of legislation relating to the administration of military affairs. When this is done, there, however, remains a mass of matters appertaining to the military establishment, which it is necessary to "regulate." Legislation can not enter into all the details of this regulation, and, if it could, it would not be desirable, because a legislative code, controlling the whole subject of military administration, would not have the necessary elasticity. The Constitution provides a way of supplementing this power of Congress, the President, as Executive and Commander in Chief of the Army, having the power to make regulations for its government.

Many systems of regulations, besides Army and Navy Regulations, have been issued, for the transaction of the business of different branches of the Government, such as the postal, patent office, pension office, land office, Indian office, civil service, customs, internal revenue, revenue-cutter service, and other treasury and consular regulations, etc. But these systems of regulations, as they are here called, form by no means the whole of that mass of regulation law which constitutes so large and important a part of our administrative law. All regulations are not collected together in systems or groups, but an enormous mass of them consists of individual regulations, the knowledge of whose existence even is ordinarily limited to the few who have to apply them to the subjects to which they relate.

What is here said with reference to executive regulations is true also with reference to other executive acts which can not perhaps be strictly classified as regulations, although it would not be going very far to say that when the executive military power does an act affecting the military record of a soldier this is in effect to regulate or to put forth a regulation in the case. The President derives his power to do these acts directly from the Constitution or from acts of Congress. In the case of *Cunningham v. Neagle* the Supreme Court of the United States said :

The Constitution, section 3, Article II, declares that the President "shall take care that the laws be faithfully executed," and he is provided with the means of fulfilling this obligation by his authority to commission all the officers of the United States, and, by and with the advice and consent of the Senate, to appoint the most important of them and to fill vacancies. He is declared to be Commander in Chief of the Army and Navy of the United States. The duties which are thus imposed upon him he is further enabled to perform by the recognition in the Constitution, and the creation by acts of Congress, of Executive Departments, which have varied in number from four or five to seven or eight, the heads of which are familiarly called Cabinet ministers. These aid him in the performance of the great duties of his office, and represent him in a thousand acts to which it can hardly be supposed his personal attention is called, and thus he is enabled to fulfill the duty of his great department, expressed in the phrase that "he shall take care that the laws be faithfully executed."

Is this duty limited to the enforcement of acts of Congress or of treaties of the United States according to their *express terms*, or does it include the rights, duties, and obligations growing out of the Constitution itself, our international relations, and all the protection implied by the nature of the Government under the Constitution? (135 U. S., 63.)

Commenting on the foregoing, Judge-Advocate-General Lieber said:

And the court, Mr. Justice Miller delivering the opinion, then give a number of examples of proper occasions for the exercise of this executive power, and conclude

that, while there is no express statute authorizing the appointment of a deputy marshal, or any other officer to attend a judge of the Supreme Court when traveling in his circuit, and to protect him against assaults or other injury, the general obligation imposed upon the President of the United States by the Constitution to take care that the laws are faithfully executed, and the means placed in his hands, both by the Constitution and the laws of the United States, to enable him to do this, impose upon the Executive Department the duty of protecting a justice or judge of any of the courts of the United States, when there is just reason to believe that he will be in personal danger while executing the duties of his office. (Remarks on the Army Regulations and Executive Regulations in General.)

So the executive acts relating to the administration of military affairs (which, it must be kept in mind, are generally an exercise of the President's power, carried out through his agents) derive their sanction from legislation, if there be any, and, if there be none, from the President's power as Commander in Chief. Where Congress is vested with a jurisdiction it may limit that of the President, but when it is not, or until it exercises its jurisdiction, the acts of the President done within the scope of his discretionary constitutional or statutory powers are conclusive; as are also the acts of his subordinates legally done as his agents. These acts can not be disturbed by either the judicial or legislative branch of the Government. Neither of these can annul the acts of the coordinate executive branch done within the scope of its constitutional power.

The departments of the Government are legislative, executive, and judicial. They are coordinate in degree to the extent of the powers delegated to each of them. Each, in the exercise of its powers, is independent of the other, but all, rightfully done by either, is binding upon the others. (*Dodge v. Woolsey*, 18 How., 347.)

A practical knowledge of the action of any one of the great departments of the Government, must convince every person, that the head of a department, in the distribution of its duties and responsibilities, is often compelled to exercise his discretion. He is limited in the exercise of his powers by the law; but it does not follow, that he must show statutory provision for everything he does. No government could be administered on such principles. To attempt to regulate, by law, the minute movements of every part of the complicated machinery of government would evince a most unpardonable ignorance on the subject. Whilst the great outlines of its movements may be marked out, and limitations imposed on the exercise of its powers, there are numberless things which must be done, that can neither be anticipated nor defined, and which are essential to the proper action of the Government. (*U. S. v. Macdaniel*, 7 Pet., 13, 14.)

When power or jurisdiction is delegated to any public officer or tribunal over a subject-matter, and its exercise is confided to his or their discretion, the acts so done are in general binding and valid as to the subject-matter. The only questions which can arise between an individual and the public, or any person, denying their validity, are power in the officer and fraud in the party. All other questions are settled by the decision made or the act done by the tribunal or officer, whether executive, legislative, judicial, or special, unless an appeal or other revision is provided for by some appellate or supervisory tribunal prescribed by law. (*Bélcher v. Linn*, 24 How., 522.)

Can executive acts, when once fully carried into execution so that there remains nothing in regard to them to be done, be undone by the executive department itself? The answer is that this is absolutely impossible. No power can undo any legally and fully executed executive act. It is beyond the power of man, and it must, therefore, be an absurdity, using the term in its logical sense, to formally declare that those completed acts were not done, and that, instead, other acts were done, which in fact were not done. It may be possible in some way and for certain purposes to grant relief to the person who was the subject of the act, but it is not possible to wipe the past and fully executed act out of existence.

What is really intended by all legislation of this kind, that for removal of the charge of desertion included, is that the President or the Secretary of War shall do something that will obliterate some other thing that was done in the past. In the case of an officer dismissed in execution of the sentence of a court-martial, it is intended that the *executed sentence* of dismissal shall be annulled, and in the case of an officer dismissed by order, it is intended that the *executed order* of dismissal shall be rendered inoperative. But it is impossible to accomplish this by legislation, by executive act, or by both combined. The act of dismissal, whether in pursuance of a court-martial sentence or of an executive order, is a thing done that can not be undone. A man shot to death in pursuance of a court-martial sentence or of an executive order is no more beyond the reach of anything that Congress or the Executive can do to him or for him, in the way of undoing what was done to him, than is an officer who was lawfully dismissed from service. It is a fact that the one was shot and the other dismissed, and that fact will remain in spite of all that human power can do. Any change of record to show a different state of facts with regard to them will be a falsification of the records, and the issuance of a certificate of discharge in the case of either of them would be the issuance of a false certificate. And to undertake to revoke a duly executed order of dismissal, no matter how unmerited or injudicious that order may be deemed to have been, is a vain and foolish thing. To revoke or modify such an order is an impossibility. And it is equally vain and foolish to issue an order purporting to discharge from the military service a person who is not in that service. It is not in the power of the President or the Secretary of War, even though Congress may have specifically declared that it is or shall be, to discharge a man from the military service who is not now in that service, although he may have been in the service at some prior date. A certificate of discharge is merely evidence of the fact of discharge, and to issue, in the case of a dismissed officer, of a dishonorably discharged soldier, or of a deserter, a certificate to the effect that he is now, or was at some prior time, honorably discharged is to issue a false certificate.

A fact in the military history of a soldier is beyond the power of recall, and can no more be obliterated than can the fact of the conviction of a man in a civil court of a felony be obliterated from the record of his life. If any disability remains, this may be removed by pardon, or by legislative act if it can not be reached by pardon, but the fact of his conviction remains.

If it were practicable to set aside the fact that a soldier deserted or was dishonorably discharged and make it nonexistent, it would be equally possible to obliterate any other or all other actual facts from his military history. It might thus be made to appear that A and B and C, or a whole organization, never were in the military service at all, although there be conclusive record proof that they were. And if any one thing can be set up as an existent fact in the past military record of a soldier, although no such thing actually occurred, so might any number of things, and a new and fictitious record thus be given the soldier covering the whole term of his military service. The exercise of such a power as this would easily lead to the most preposterous and absurd results.

But, if these things could be done and it were possible to go back two or forty or a hundred years and change completed events (for

time is not of the essence of the proceeding, and if such proceeding can be taken with reference to the near past so may it also with reference to the more distant period), then the question arises what bearing such legislation would have on the pardoning power.

In *ex parte Garland*, 4 Wall. [71 U. S.] 380, Mr. Justice Field speaking for a majority of the court says: "A pardon reaches both the punishment prescribed for the offense and the guilt of the offender; and when the pardon is full, it releases the punishment and blots out of existence the guilt, so that in the eyes of the law the offender is as innocent as if he had never committed the offense." This is probably as strong and unqualified a statement of the scope and efficacy of a pardon as can be found in the books. And yet I do not suppose the opinion is to be understood as going the length of holding that while the party is to be deemed innocent of the crime by reason of the pardon from and after the taking effect thereof, that it is also to be deemed that he never did commit the crime or was convicted of it. The effect of the pardon is prospective and not retrospective. It removes the guilt and restores the party to a state of innocence. But it does not change the past and can not annihilate the established fact that he was guilty of the offense. * * * The answer to the question: Has he behaved as a man of good moral character? must still be in the negative; for the fact remains, notwithstanding the pardon, that the applicant was guilty of the crime of perjury—did behave otherwise than as a man of good moral character. (In *re Spenser*, 22 Federal Cases, 921.)

Whilst Congress has no power, by legislation, to abridge the effect of the President's pardon, yet Congress has the right to prescribe qualifications and conditions for enlisted men, and to forbid those not possessing such qualifications, and as to whom such conditions do not exist, to enter the military service. So, whilst the President's pardon restores the criminal to his legal rights and fully relieves him of the disabilities legally attaching to his conviction, it *does not destroy an existing fact*, viz, that his service was not honest and faithful. (22 Opin. Atty. Gen., 39.)

A pardon is not retroactive. It cannot remit an executed punishment or restore an executed forfeiture resulting either by operation of law or sentence. It cannot therefore restore the forfeitures incident upon desertion. Further it cannot modify past history, or reverse or alter the facts of a completed record. From and after the taking effect of a pardon, the recipient is innocent in law as to any subsequent contingencies, but the pardon does not annihilate the fact that he was guilty of the offense. The pardon indeed proceeds upon the theory that the party was guilty in fact. The asking for it is an admission of guilt, and the granting of it is a recognition of the fact of guilt. Thus *held* that the President could not, by a pardon, remove the charge of desertion from the record of a former soldier, who had long since become a civilian by reason of the muster-out and non-existence of the volunteer army to which he had belonged in the war of the rebellion; and that the effect of his pardon would not be to give him an honorable discharge. A pardon would not only not remove a charge of desertion, but would in fact confirm it, and constitute an additional reason for retaining it on the record. And a party cannot, by an executive act, be discharged from the service unless he is *in* the service. (Digest Opin. Judge Adv. Gen., sec. 1879.)

A pardon can not obliterate the fact of dismissal, nor can it give to a dismissed officer any of the rights or benefits that are provided by law exclusively for honorably discharged officers. (*Spenser's case*, 22 Fed. Cas., 921. Opin. Atty. Gen. IV, 274; XV, 290; XXII, 36. See also opinions of the Judge-Advocate-General of April 20 and June 14, 1897, in the case of Thomas Buchanan, and Digest of Opinions of the Judge-Advocate-General, secs. 1869, 1880, 2041.) If an officer were suffering a continuing punishment, as is sometimes the case where the court-martial sentence awards a forfeiture of pay or confinement for a specified period or a loss of relative rank, a pardon would remove any unexecuted part of the forfeiture or confinement or might restore him to his former relative rank, but it can not relieve him from an executed sentence of dismissal or any other executed sentence. And the same remarks apply with equal force to the cases of deserters. A pardon restores citizenship forfeited by those whom a court-martial has convicted of the crime of desertion, because loss

of citizenship is a statutory and continuing *addition to the punishment* imposed by court-martial in such cases (R. S., 1996, 1998; Kurtz v. Moffitt, 115 U. S., 501, and cases there cited), but it can not make the deserter, whether convicted by a court-martial or not, an honorably discharged soldier, nor can it give him the right to pension under the act of June 27, 1890, or any other rights or benefits that are restricted by law to honorably discharged soldiers. Indeed almost all this legislation for the relief of deserters and of dismissed or dishonorably discharged officers and men is enacted because it is well understood that a pardon will be of no material benefit to them.

And legislation of this character, even when merely permissive, is not equivalent to an authorization to the President or the Secretary of War to review court-martial or other proceedings had in the past, because such a review, and any declaration of conclusion reached as a result of it, would be futile. It would not change the status of a dismissed officer in any way to have the President or the Secretary of War review his case and subsequently publish a declaration that the officer was unjustly dismissed.

But, if this were not true and if fully executed sentences of courts-martial, or fully executed legal orders issued by competent authority in cases other than court-martial cases, could be reached by the pardoning power, then all legislation purporting to set aside or to authorize the President or Secretary of War to set aside the executed sentences of courts-martial, or to review the proceedings of courts-martial whose sentences have been executed, or to revoke fully executed legal orders issued in any case, court-martial or other, would be both unnecessary and unconstitutional. The pardoning power of the President is complete and absolutely independent of any action of Congress. Congress can not add to it nor encroach upon it.

The power of pardon conferred by the Constitution upon the President is unlimited, except in cases of impeachment. * * * The power is not subject to legislative control. (Ex parte Garland, 4 Wall., 334.)

Where it was proposed to authorize and direct the Secretary of War, by act of Congress, "to revoke and set aside the proceedings had by a court-martial * * * during the month of November, 1865, and to remit the sentence promulgated thereunder by order of April 13, 1866," *held* that it was beyond the constitutional power of Congress to thus invest the Secretary of War with the pardoning power and to extend it to a sentence long since carried into execution. The pardoning power of the President can neither be added to nor detracted from by legislation, and it has been repeatedly held with reference to this power that it cannot reach an executed sentence. It must be therefore beyond the authority of Congress to vest in a subordinate official a power to pardon, which the constitutional pardoning power cannot exercise. Congress cannot in this or any other way undo the executed judgment of a court-martial. (Digest Opin. Judge Adv. Gen., sec. 1880.)

If the pardoning power could reach such cases, no action of Congress would be necessary, but the pardoning power can not reach them, and it is beyond the authority of Congress to add anything to that power. It would seem, therefore, that legislation purporting directly to set aside legally executed sentences of courts-martial or other executive acts is unconstitutional, as is also all legislation undertaking in any way to regulate the exercise of the pardoning power.

The next question to be considered is whether there is any constitutional way of granting relief in meritorious cases. So far as regards the pension laws, or any other laws granting benefits on account of military service rendered, there is no *legal* difficulty. Congress has full power over such legislation and may declare who shall and who shall

not be entitled to its benefits. It may make dishonorably discharged officers and enlisted men, and deserters, pensionable if it sees fit to do so. And if it disqualifies them as a class it may remove the disqualification from the class or in individual cases. There is a direct way of doing this, and that is by so wording the legislation as to confer on the officer or enlisted man the benefits of the pension or other laws *as though he had not been dismissed, had not been dishonorably discharged, or had not deserted*. Such legislation would be clearly constitutional and would not be open to the objection that it is illogical or that it attempts to effect an impossibility. It would not make a good record of a bad one, but for the reasons stated this can not be done in such cases as are now under consideration. However, it is believed to be the only strictly consistent legislation that can be enacted in such cases. If it should be deemed to be unsatisfactory because it recognizes and is based on the discreditable fact which it is desired to cover up, there seems to be no other way of granting relief (excluding the actually unconstitutional legislation) than the anomalous one of so wording the legislation that, instead of undertaking to do the logically impossible, it shall provide that those whom it is desired to relieve shall *hereafter be held and considered* to have been honorably discharged, and not to have deserted, to have been dishonorably discharged, or to have been dismissed the service.

Such language removes the principal objection to the class of legislation which has been referred to, inasmuch as it does not encroach upon the constitutional powers of the President nor actually substitute a fiction for a fact. But it can not be denied that it is anomalous in prescribing that a thing which has never occurred shall be "considered" to have occurred, or that a thing which has occurred shall be "considered" not to have occurred. It is, however, only as a substitute for still more objectionable legislation that this form of expression is suggested.

CLERICAL FORCE.

In closing this report, I have pleasure in expressing my appreciation of the ability, zeal and fidelity with which the employees of this office have performed the laborious and often difficult duties imposed upon them.

Very respectfully,

F. C. AINSWORTH,
*Brigadier-General, U. S. A.,
Chief, Record and Pension Office.*

The SECRETARY OF WAR.

**REPORT OF THE CHICKAMAUGA AND CHATTANOOGA
NATIONAL PARK COMMISSION.**

**REPORT OF THE CHICKAMAUGA AND CHATTANOOGA NATIONAL
PARK COMMISSION.**

WAR DEPARTMENT,
CHICKAMAUGA AND CHATTANOOGA
NATIONAL PARK COMMISSION,
Washington, October 1, 1903.

SIR: The Commissioners have the honor to submit their annual report for the fiscal year ending June 30, 1903.

As the designation of the Chickamauga Park as one of the national maneuvering grounds was leading the holders of adjacent lands to increase their prices, it was thought best by the Commissioners to acquire what has been known for several years as the north extension, and which has been deemed necessary to the final establishment of the park. Under the authority of the annual appropriation to purchase land within the legal limits of the park this tract of 793 acres has been acquired at a cost of \$32,574, the average price per acre being \$41.08. As land is now being held in the vicinity of the park this was deemed reasonable.

The tract immediately became of great practical value to the Government, as a large portion of this tract was chosen for permanent use as a cavalry post. The arrangement of the post is such as not to interfere with the historical marking of the added tract.

It is also a matter of satisfaction to the Commission that for another year the practical use of the park by the Government has continued by maintaining the field camp of the Seventh Cavalry within its limits. In view of the wild reports of the unhealthfulness of the park which gained currency during the war with Spain, it is proper to say that the health of the soldiers camped there and of the park force and its laborers has continued exceptionally good. The water throughout the park has proved excellent, and an abundant supply has been secured for the encampments and the new post from flowing wells.

The use of the park for permanent camps has entailed some additional road work for their better accommodation. This has been nearly completed, but the extra expense above the expected expenditures for the year has made it impossible to reduce the estimates for the coming year below those for the last. With the same appropriation as was

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made for the current year, it is confidently believed by the Commissioners that the work of the establishment will be so far completed as to allow 25 per cent reduction in the next annual estimate.

The States of New York, Maryland, Ohio, and Iowa are preparing to erect State monuments during the coming season, for each of which liberal appropriations have been made by the States named.

The report of the Engineer,^a herewith submitted, shows in detail all work undertaken, the portion completed, and the cost of each branch thereof.

ROADS.

Construction and betterments.—Three miles of new roadway were constructed during the year, 2½ miles being on the Dry Valley approach and one-half mile on the Forrest and McFarland Gap roads, giving us a total mileage of 80 miles of improved road.

The betterments include the laying of about 2 miles of paved gutters, the building of 11 culvert head walls, the laying of 250 square feet of rock revetment, and the spreading of 3,044 cubic yards of gravel. The total cost of construction and betterments was \$13,396.43.

Maintenance.—The following were the expenditures made for maintenance:

Buildings	\$116. 08
Roads	3, 743. 49
Monuments, tablets, and towers	669. 89
Water supply	68. 55
Total	4, 598. 01

MONUMENTS, TABLETS, AND TOWERS.

Guns.—Twenty guns have been mounted in place along the Crest road of Missionary Ridge to mark ten Confederate battery positions during the battle of Chattanooga.

Monuments and memorials.—Foundations for a monument to the Seventy-third Pennsylvania Volunteer Infantry, and for State memorials of Maryland, Ohio, and Iowa (3) have also been placed on this field. The foundation of the New York memorial on Lookout Mountain is under way. It is 52 feet in diameter, and will contain about 479 cubic yards of masonry.

The work of building the stone stairway in the Wilder monument to admit of its use as an observation tower has been begun, all of the material being on the ground.

Tablets and fencing.—Nothing has been expended for tablets and fencing during the past fiscal year.

Field work.—All of the main fields of the park were machine mowed, and 13,270 cubic yards of manure was spread in the fields along both sides of the Lafayette road between the north and south lines of the park. All erosions of the surface of the park have been worked over, and windfalls have been cut up and burned.

^a Not printed.

CHICKAMAUGA AND CHATTANOOGA NATIONAL MILITARY PARK. 221

RECEIPTS AND EXPENDITURES.

The receipts and expenditures for the fiscal year ending June 30, 1903, were as follows, vouchers for each item being on file in the office of the disbursing clerk of the War Department:

Receipts:

On hand per last report, balance of appropriation fiscal year ending June 30, 1902	\$7,854.95
Appropriation fiscal year ending June 30, 1903	50,000.00
Deficiency appropriation fiscal year ending June 30, 1903	33,923.75
	<hr/>
	91,778.70

Expenditures from July 1, 1902, to June 30, 1903:

Salaries of commissioners	\$7,200.00
Salaries of clerk and messenger	2,700.00
Salaries of employees at park	10,778.33
Mileage, etc	547.69
Miscellaneous—	
Binding atlas	\$9.25
Flags	68.22
Forage	1,026.56
Freight	29.06
Oaths to contracts	2.25
Photographs and photograph supplies	41.00
Telegrams	56.98
Telephone service	36.00
Towel service	12.00
Transportation	784.73
Typewriter	75.00
	<hr/>
Stationery and printing	2,141.05
Furniture	201.96
Legal expenses	3.00
Labor	48.60
Machinery, tools, etc	19,984.15
Material for construction	270.72
Monuments	752.66
Towers	20.00
Gun carriages	713.85
Bridges	1,501.15
Model in relief	426.73
Land	700.00
	<hr/>
Total	32,574.00
	<hr/>
Total	80,563.89
	<hr/>
Balance	11,214.81

Respectfully submitted.

For the Commission,

H. V. BOYNTON,
Chairman.

The SECRETARY OF WAR.

**REPORT OF THE GETTYSBURG NATIONAL
MILITARY PARK COMMISSION,**

REPORT OF THE GETTYSBURG NATIONAL MILITARY PARK COMMISSION.

WAR DEPARTMENT,
GETTYSBURG NATIONAL PARK COMMISSION,
Gettysburg, Pa., August 1, 1903.

SIR: The Gettysburg National Park Commission submit the following report of their work, its progress during the past year, and its present condition, with some suggestions as to what is needed for its further prosecution:

MILITARY AVENUES.

Buford avenue, mentioned in our last report as being in course of construction, has been completed. It runs from Reynolds avenue northwestward to the Mummasburg road along the line of the Union cavalry, which threatened the left flank of the Confederate infantry as it advanced into the first day's battle.

Stone avenue, which runs along the line of the Bucktail brigade from the Chambersburg pike to Reynolds woods, has been constructed.

Meredith avenue, which runs along the line of the Iron Brigade through Reynolds woods, has been completed to the southern border of those woods, but its further progress to a junction with Reynolds avenue, a distance of only 800 feet, has been thwarted for the present by the receivers of a speculative so-called "land improvement company," who refuse to grant right of way over, or convey title to, the small strip of land needed for said avenue except upon such inadmissible terms and conditions that very likely the Commission may have to institute condemnation proceedings in order to secure title to said land for the United States.

Wright avenue has been put under contract and its construction begun. It runs from the southern base of Little Round Top across the eastern slope of Big Round Top, and then curves eastward and extends to the Taneytown road, following the lines of Russell's and Grant's brigades of the Sixth Union Army Corps, these brigades having been placed in that position to guard against a possible flank movement of the Confederates around the south side of Round Top.

Several other avenues should be constructed, among them one running from the Wheatfield road near Plum Run along the line of the Pennsylvania reserves to Sickles avenue; another starting from a point on Sickles avenue and running across the western branch of

Plum Run and along the line of General Brooke's brigade on the summit of Rose Hill; another running from the upper end of Crawford avenue northward to United States avenue, and another along the Confederate line of battle on the cavalry battlefield. The lands on which these avenues will be located belong now to the United States.

There should be an avenue on Oak Hill and vicinity following the lines and indicating the positions of the infantry and artillery of Rodes's division of Ewell's Confederate army corps as they debouched in a direction so threatening to the right flank of Reynolds's corps on the first day's field; also an avenue running from the Hanover road east of Rock Creek to Benners Hill, where a number of Confederate batteries were posted on the second and third days. The lands needed for the two last-mentioned avenues have not yet been, but should be, acquired by the United States, as also the grounds on both Oak Hill and Benners Hill, whereon the Confederate troops deployed and the batteries were operated. There should be a good road constructed from Gettysburg to the cavalry battlefield, about 3 miles east of the town, whither the present routes are extremely unsatisfactory.

TABLETS AND GUNS.

Gun carriages have been purchased and guns mounted thereon during the year as follows:

- One 10-pounder Parrott to Maurin's battery.
- Two Napoleons to Lewis's battery.
- One 3-inch rifle to Moore's battery.
- One 10-pounder Parrott to Moore's battery.
- Two 12-pounder howitzers to Grandy's battery.
- Two Napoleons to Brander's battery.
- Two Napoleons to McGraw's battery.
- Two 3-inch rifles to Zimmerman's battery.
- Two 12-pounder howitzers to Crenshaw's battery.
- Two Napoleons to Marye's battery.
- One 10-pounder Parrott to Wyatt's battery.

Six 12-pounder howitzers of Poague's artillery battalion mounted in their old lunettes on the west side of Confederate avenue, north of Spangler's woods.

The number of guns, Union and Confederate, which have been mounted on the field by the Commission is 311.

The ten Confederate itinerary tablets which were being cast at the date of our last report have since been finished and erected on the west side of the Confederate avenue on Seminary Ridge near the junction of said avenue with the Fairfield road. They record the location and movements of the several corps, divisions, and brigades of the Confederate army on each and every day from June 26, 1863, when the last of its forces crossed the Potomac into Maryland, until after the close of the battle and the retreat of the Confederates from Gettysburg July 5, 1863.

There have also been cast and erected along the avenues during this year twenty-three of what may be termed guide tablets, designed to give useful hints and directions to persons driving over the field.

The number of metallic tablets of all kinds which have been erected on the battlefield up to this date is 450.

The lands acquired by the Commission prior to our last report amounted to 1,291.4541 acres. There have been acquired during the

ACQUISITION OF LANDS.

past year nine different tracts of land, several of them being quite small in area, but each embracing an important historic point on the battlefield. The largest one, containing 33 acres, lies on the cavalry battlefield, it being the ground on which the Confederate cavalry and artillery formed their lines and posted their batteries, a large portion of it being covered with its native forest, which should be preserved.

Another tract of over 10 acres lies just in rear of General Hood's line of battle of the second day. This also is covered with native forest, important to be preserved, but which would have been destroyed ere this if our Commission had not saved it by purchasing the land.

Another small tract, of $2\frac{1}{2}$ acres, lies on the eastern slope of Big Round Top, and its purchase was necessary to complete the line of Wright avenue.

Another acquisition, consisting of four small tracts amounting in all to over 10 acres, lies on both sides of Hancock avenue near its northern terminus, and the Commission felt in duty bound to secure it to prevent its being converted into a brickyard and put to other uses which would seriously mar and disfigure a very important and interesting portion of the battlefield. It has been secured for the Government, although in order to do so it became necessary to resort to condemnation proceedings.

The whole area of the lands now owned by the United States at Gettysburg is 1,349.3548 acres, or 2.108 square miles.

There are a number of other tracts and parcels of land on the battlefield which should be secured for the Government in order to complete the Gettysburg National Park as it should be done. The Commission is now seeking, under the supervision of the War Department, to secure for the United States certain lands considered important for the proper development of the park and the preservation of the battlefield as it was in 1863.

SURFACE OF THE FIELD.

By far the larger portion of the battlefield retains its forests and cleared lands very much as they were in 1863, but a few important sections of the field have, since that date, been denuded of their forests. In several places where the trees have been only partially cut away nature is rapidly restoring the forest by a fresh undergrowth; but where the ground has been left entirely bare, our Commission is taking much pains to reforest it. A great number of forest trees have been planted since the establishment of the national park—5,000 planted during the past year—and are growing fine.

On our application, through the Secretary of War, to the Chief of the Bureau of Forestry, Mr. H. B. Kempton, of that Bureau, came here early in May of this year, and made an examination for the purpose of determining what portions of the park should be reforested and how it could best be done, and of reporting his conclusions. His report has not yet been received.

But, even if no better plan is devised than our Commission has followed, that of planting on the denuded grounds a large number of forest trees each year, it will not be a great while until the battle-

field will be restored, as to field and forest, to the same condition substantially as at the date of the battle.

As has been stated in previous reports, great care is taken in laying out avenues, to avoid, as far as possible, locating them where their construction would necessitate much marring of the surface of the ground in order to grade them properly. Fortunately this has not caused serious embarrassment on the field of Gettysburg, because the lines of battle of both armies were usually formed along the summits of ridges and, in constructing the avenues along the battle lines, little difference of altitude was found and no heavy grading was required.

MONUMENTS.

An equestrian statue of Maj. Gen. Henry W. Slocum has been erected by the New York State Commission on the summit of Stevens's Knoll, and its dedication on September 20, 1902, was attended by many veterans of his command—the Seventh New York Infantry—and detachments of United States regulars.

The equestrian statue of Maj. Gen. Winfield S. Hancock on East Cemetery Hill, which had been dismounted because of injuries to the pedestal and capstone by lightning, has been restored to its position, the injuries having been repaired at the expense of the Commonwealth of Pennsylvania.

A monumental tablet, with suitable inscription, has been erected at the expense of the association specially interested in it, east of Hancock avenue in the field of the Meade statue, to mark the position of the One hundred and fourteenth Pennsylvania Infantry on the third day of the battle.

The monument and guns of the First New York Light Artillery (Fitzhugh's battery) have been moved, with the approval of the Secretary of War, from its former location near the junction of Hancock and Pleasonton avenues to a position on Hancock avenue to the left of the Eleventh New York Battery, upon satisfactory proof that this was the true position. The work of removal was done entirely at the expense of Colonel Fitzhugh.

WORK OF ENGINEERS' DEPARTMENT.

There has been erected on the field, prior to this year, 44,850 feet of pipe fencing, and, during this year, 12,500 feet, making 57,350 feet in all, or nearly 11 miles; and a contract has been made for the erection of over 2 miles more.

Of post and rail fencing there has been heretofore erected 26,620 feet, and, during this year, 10,500 feet, making 37,120 feet in all, or more than 7 miles.

Of stone fences, 21,292 feet have been rebuilt prior to the present year, and, during this year, 2,775 feet, making 24,067 feet in all, or more than 4½ miles.

There are on the battlefield over 19 miles of Telford avenues along the battle lines, and the drains and gutters along them are being paved wherever needed. Up to the present time 35,000 feet, or over 6 miles, of this paving has been done in the most durable style. An almost unlimited supply of excellent flat stones, suited for this purpose, was found on the western slope of Big Round Top; and the avenues, with their gutters and drains paved therewith, will indeed last for years, scarcely needing any repairs.

MISCELLANEOUS.

A storage building, for the shelter and protection of the steam rollers, mowers, and other tools and implements belonging to the United States and used on the field, has been erected near the junction of Pleasanton avenue with the Taneytown road.

The Commission has advertised for bids to construct an iron bridge of ample span and height over the Western Maryland Railroad on Reynolds avenue, and a number of bids have been received but none as yet accepted.

An act of the legislature of Pennsylvania having conceded the privilege of converting any or all of the public roads on this battlefield into Telford pikes or avenues, and a permit having been granted our Commission to do this as to the Taneytown road from the town line southward at least as far as General Meade's headquarters, and also the Wheatfield road from Plum Run Valley across the battlefield to West Confederate avenue, it is our purpose to make these two improvements at as early a date as practicable.

Without undertaking to specify more fully all the details of interest respecting our work, we conclude this report with the statement of a fact very gratifying to us—that, of the many thousands of visitors from all sections of our country who throng the Gettysburg National Park each year, all express their hearty approval of the manner in which the Government of the United States is making of this battlefield a splendid and enduring national monument.

Respectfully,

JOHN P. NICHOLSON,
Chairman,
WM. M. ROBBINS,
CHAS. A. RICHARDSON,
Commissioners.

The SECRETARY OF WAR.

THIRTY-THIRD REUNION OF THE SOCIETY OF THE ARMY OF THE POTOMAC.

GETTYSBURG, PA., *September 19 and 20, 1902.*

* * * * *

Gen. JAMES A. BEAVER. Mr. Chairman: I would like to offer a resolution, in view of the fact that we are in session at Gettysburg, and that is to commend the work of the present Gettysburg Battlefield Commission, and recommend to Congress future appropriations for the work. You have heard the report already made that there has been only about \$400,000 expended, in comparison with the work which has been done elsewhere. I am very sure that every man who sees this will realize that the United States has received 110 cents for every dollar that has been expended, and it seems to me that it would be altogether inappropriate for us to adjourn without commending in some way the work of this Commission, and recommending to our Representatives in Congress the care of this battlefield. I therefore move you, sir, the following resolution:

Resolved, That this society, the members of which have viewed with sincere pleasure the work of our battlefield commission, earnestly recommends to Congress the continued care and extension of the work of the Commission on this field.

The resolution was cheered and adopted.

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JOHN R. BROOKE, *President.*
H. C. KING, *Secretary.*

At a regular encampment of U. S. Grant Post, No. 327, Department of New York, Grand Army of the Republic, held at its quarters in Brooklyn, N. Y., on the 28th day of October, 1902, the following resolutions were unanimously adopted, the adjutant being instructed to transmit duly authenticated copies of the same to the Secretary of War, the President of the Senate, the Speaker of the House, and the chairman of the Gettysburg National Park Commission:

Whereas many comrades of this post have visited the battlefield of Gettysburg; have driven over the beautiful avenues which follow the undulating lines of battle of the contending armies, and observed the substantial and permanent character of the roadways, bridges, fences, retaining walls, and observation towers; have noted how carefully the names of historic points on the field have been retained, the natural and artificial breastworks restored, and the ground, forests, roads, and streams preserved substantially as they existed at the time of the battle; have seen the appropriately inscribed iron tablets marking and recording the positions, formations, and movements of infantry, artillery, and cavalry commands—Union and Confederate—during, preceding, and after the battle; have admired the bronze statues of renowned officers whose familiar names became household words on the day of Gettysburg; have looked with pride upon the hundreds of monuments of stone and of granite patriotically erected to commemorate regimental valor and prowess—although noting, with regret, the absence of regular army monuments—and, as veteran soldiers of the civil war, have contemplated with surprise and delight the character, scope, and extent of the work so comprehensively undertaken and intelligently performed by the Gettysburg National Park Commission, under whose hands Gettysburg has already become the best plotted and marked of all battle grounds; therefore,

Resolved, That U. S. Grant Post, No. 327, Department of New York, Grand Army of the Republic, unreservedly approves the patriotic purpose of the National Government suitably and adequately to preserve the battle ground of Gettysburg as a National Park;

That we particularly and specially praise the skillful and faithful work of Col. John P. Nicholson, Maj. William M. Robbins, and Maj. Charles A. Richardson, the members of the Commission, through whom the successful realization of the purpose of the Government is being so thoroughly carried out;

That fully appreciating the splendid results already achieved, but realizing that much still remains to be accomplished before this noble project will be completed, this post earnestly expresses the hope that the Commission may continue to receive the liberal support of Congress, to the end that its work, when finally completed, may be a fitting and enduring memorial of the patriotism and valor of the American soldier.

[SEAL.]

AUGUSTUS C. TATE,
Commander.

Attest:

PHILIP S. CLARK, *Adjutant*.

Length of avenues on the Gettysburg battlefield.

	Feet.
Howard avenue from Harrisburg road to Mummasburg road	5, 750
Reynolds avenue from Buford avenue to Hagerstown road	5, 250
Buford avenue from Mummasburg road to Reynolds avenue.....	3, 435
Seminary avenue from Chambersburg pike to Hagerstown road	2, 500
Slocum avenue from Baltimore pike to Spangler's spring	6, 373
East Confederate avenue from Gettysburg to Spangler's spring.....	7, 241
Hancock avenue from Taneytown road to United States avenue	7, 825
Meade avenue from Taneytown road to Hancock avenue	950
Pleasanton avenue from Taneytown road to Hancock avenue	1, 504
United States avenue from Hancock avenue to Emmitsburg road	4, 150
Sedgwick avenue from United States avenue to Wheatfield road	2, 841
Sykes avenue from Wheatfield road to Round Top.....	2, 997
Wright avenue from Chamberlain avenue to Taneytown road	3, 000
Crawford avenue from Devil's Den to Wheatfield road	3, 530
Sickles avenue from Devil's Den to Emmitsburg road	6, 515
West Confederate avenue from Hagerstown road to Wheatfield road.....	10, 470
Section 4, West Confederate avenue from Wheatfield road to Emmitsburg road	3, 700
Section 5, West Confederate avenue from Emmitsburg road to section 6.....	2, 470
Section 6, West Confederate avenue from section 5 to section 7	1, 840
Section 7, West Confederate avenue from section 7 to section 8	2, 850
Section 8, West Confederate avenue from section 7 to Sykes avenue.....	1, 617
Warren avenue from Sykes avenue to Crawford avenue	1, 550

	Feet.
Chamberlain avenue from Sykes avenue southerly to Sykes	1,050
Stone avenue from Chambersburg pike to Reynolds woods	900
Meredith avenue from Reynolds woods to Reynolds avenue	1,950
Wadsworth avenue from Doubleday avenue to Reynolds avenue	900
Doubleday avenue from Mummasburg road to Wadsworth avenue	2,150
Robinson avenue from Mummasburg road to Doubleday avenue	950
Wheatfield avenue from Excelsior field to Wheatfield woods	1,100
Reynolds Branch avenue in Reynolds woods	492
Geary avenue from Slocum avenue to Spangler's spring	2,036
Total	99,376

Or 18.825 miles.

List of photographs to accompany report of Gettysburg National Park Commission, 1903.

1. Buford avenue, looking south.
2. Stone avenue, from Reynolds Grove.
3. Meredith avenue, looking south.
4. Paved gutters on West Confederate avenue.
5. Poague's howitzers and earthworks, West Confederate avenue.
6. Itinerary tablets, Army of Northern Virginia, West Confederate avenue.
7. Storage building, Pleasanton avenue.
8. Statue to Maj. Gen. H. W. Slocum, Stevens Knoll, looking southwest.
9. Statue to Maj. Gen. H. W. Slocum, looking east.
10. Building between the Round Tops.
11. Infantry tablet, Army of Northern Virginia, West Confederate avenue.
12. New fencing on Howard avenue.
13. New fencing on Slocum avenue.
14. New fencing on Gregg avenue.
15. New fencing on Gregg avenue.
16. One hundred and fourteenth Pennsylvania marker, Hancock avenue.
17. View of completed bridge over Plum Run, looking north.
18. View of completed bridge over Plum Run, looking south.

Blueprints accompanying the report of the Gettysburg National Park Commission of 1903.

- No. 477. Tract of land belonging to Robert Sheads.
- No. 478. Tract of land belonging to J. S. Forney.
- No. 479. Tract of land conveyed by heirs of Amos Leister.
- No. 480. Tract of woodland conveyed by Benjamin F. Redding.
- No. 481. Tract of land belonging to William A. Himes and J. E. C. Miller in Mount Pleasant Township.
- No. 482. Tract of land belonging to William A. Himes and J. E. C. Miller in Mount Pleasant Township.
- No. 483. Retaining wall on Stone avenue.
- No. 484. Storage building and plan for cannon platform.
- No. 485. Springs road from Seminary avenue to Willoughby Run.
- No. 486. Military map showing the operations of the Union and Confederate armies from Fredericksburg, Va., to Harrisburg, Pa., 1861 to 1865.
- No. 487. Stadia rod.
- No. 488. Profile of railroad cut at crossing of Reynolds avenue.
- No. 489. Plan of Wright avenue from Chamberlain avenue to Taneytown road.
- No. 490. Drawings accompanying application for space within War Department exhibit at the St. Louis Exhibition, 1904.
- No. 491. Plan for floor space in four compartments in the War Department exhibit at the St. Louis Exposition. One of the compartments, 20 by 25 feet—500 square feet—to be set apart for the use of the Gettysburg National Park Commission.

List of tablets on the battlefield of Gettysburg marking organizations of the Union Army.

BATTERY TABLETS.

Wilkinson; Kinsey; Kinsey, second section; Rugg; Taft; Taft, second section; Stuart; Dilger; Bancroft; Eakin; Edgell; Butler; Woodruff; Martin; Oushing; Wier; Thomas; Hazlett; Turnbull; Seeley; Williston; Heaton; Calef; Pennington; Randol; Graham; Elder; Watson; Calef, second section; Smith, second section

UNITED STATES CAVALRY TABLETS.

First, Second, Fifth, and Sixth Cavalry	4
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UNITED STATES INFANTRY TABLETS.

Second, Third, Fourth, Sixth, Seventh, Tenth, Eleventh, Twelfth, Fourteenth, and Seventeenth Infantry	10
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ITINERARY TABLETS OF MOVEMENTS OF THE ARMY OF THE POTOMAC.

On East Cemetery Hill, Gettysburg battlefield	9
At Two Taverns, Pa.	2
At Littlestown, Pa.	1
At Hanover, Pa.	2
At Manchester, Md.	2
At Westminster, Md.	2
At Uniontown, Md.	1
At Middleburg, Md.	1
At Taneytown, Md.	2
At Fairfield, Pa.	1
At Emmitsburg, Md.	2
At Hunterstown, Pa.	1

DISTANCE AND DIRECTION TABLETS.

On roads radiating from Gettysburg	12
Total	82

List of tablets on the battlefield of Gettysburg marking organizations of the Army of Northern Virginia.

BRIGADE TABLETS.

On East Confederate avenue: Hays, Gordon, Hoke, Jones, Nicholls, O'Neal, Daniel, Steuart, Walker, Smith.	10
On West Confederate avenue: McGowan, Thomas, Brockenbrough, Lane, Davis, Mahone, Scales, Pettigrew, Posey, Archer, Wright, Garnett, Armistead, Kemper, Perry, Wilcox, Wofford, Barksdale.	18

ARTILLERY BATTALION TABLETS.

On West Confederate avenue: Dance, McIntosh, Garnett, Pegram, Lane, Poague, Dearing, Eshleman, Alexander, Cabell, Henry	11
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BATTERY TABLETS.

Smith, Cunningham, Johnson, Hurt, Rice, Wallace, Watson, Griffin, Maurin, Lewis, Moore, Grandy, Brander, McGraw, Zimmerman, Crenshaw, Marye, Ross, Wingfield, Graham, Wyatt, Brooke, Ward, Patterson, Blount, Macon, Caskie, Stribling, Norcum, Richardson, Squires, Miller, Rhett, Moody, Taylor, Parker, Jordan, Woolfolk, Carlton (first section), Manly, Carlton (second section), McCarthy, Frazer, Latham, Bachman, Garden, Reilly	47
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CONFEDERATE ARMY DIVISION TABLETS.

At Black Horse Tavern	1
On Seminary avenue	1

ITINERARY TABLETS.

On Confederate avenue: June 26, 27, 28, 29, 30; July 1, 2, 3, 4, 5	10
Total	98

**REPORT OF THE SHILOH NATIONAL MILITARY
PARK COMMISSION.**

REPORT OF THE SHILOH NATIONAL MILITARY PARK COMMISSION.

WAR DEPARTMENT,
SHILOH NATIONAL MILITARY PARK COMMISSION,
Pittsburg Landing, Tenn., September 1, 1903.

SIR: The Shiloh National Military Park Commission has the honor to submit its report for the year ending August 31, 1903.

Roads.—At the date of the last annual report the total mileage of roads built in the park was 22.98 miles. During the past year these roads have been extended in various directions to the extent of 1 mile, making 23.98 miles. About 3 miles are yet to be built.

Culvert pipe has been set in these new roads wherever required, and also in several places in the old roads where the water was too much for the pipe in place. Twenty-four concrete head walls have been built for this culvert pipe.

Underbrush.—The underbrush has been cleared in the park during the entire year, so that the ground is now in good order. Work has been done on about 3,000 acres during the year.

Trees.—Places that were washed out by the rains have been dammed so as to catch the dirt floating down, and are rapidly filling up. Other such places have been filled and grass planted over them. Wherever water was liable to wash gullies upon the field, trees of a rooty nature have been planted to protect the soil. About 300 trees have been set out during the year upon the fields that were cut out after the battle.

Monuments.—The State of Indiana has erected 22 monuments upon the field, and they were dedicated with appropriate ceremonies on the 6th of April last. The monuments were received from the State of Indiana, upon behalf of the United States, by the Hon. Wm. Cary Sanger, Assistant Secretary of War.

The State of Iowa has erected 11 regimental monuments upon the field, and these are complete with the exception of the bronze descriptive tablets for the Fifteenth and Sixteenth Regiments. These inscriptions are at present in controversy. The granite work of the Iowa State monument is complete and part of the bronze work. Work has been suspended upon this monument, however, for the reason that part of the bronze is not in accordance with the specifications. This matter is now receiving attention on the part of the Iowa Shiloh Commission.

The Illinois State monument is complete, as well as its regimental and battery monuments, and this State will dedicate its monuments on the 6th of October next.

The State of Pennsylvania has erected a monument to its Seventy-seventh Regiment of infantry, the only organization of the State

engaged in the battle. It is expected that they will dedicate this monument and transfer it to the United States during next November.

Each division and brigade headquarters upon the field is now marked by a pyramid of 10-inch shells upon a concrete base. Iron letters of sufficient size are attached to the base of each monument, simply denoting the name of the commander. The "brigade" pyramid of shells is a little smaller than those of the division headquarters.

The division headquarters so designated are those of Sherman, W. H. L. Wallace, McClelland, Hurlbut, and Prentiss. The brigade headquarters are Sweeny, Tuttle, Stuart, McDowell, Ross, and Hare.

Tablets.—During the present year 181 historical tablets have been placed upon the field, and about 50 more are in process of construction and will be erected in the next three months. There are now 391 historical tablets upon the field, marking the positions of the different organizations. The brigade for both Union and Confederate armies is taken as a unit for such marking, and regimental markers have been erected only to regiments or batteries which became detached from their brigades.

Of the 391 tablets, 193 are for the Army of the Tennessee, 28 for the Army of the Ohio, and 170 for the Confederate Army.

There were 128 organizations in the Union Army. They are mentioned by name, as organizations, 438 times upon tablets, a little less than four times to each organization.

There were 106 Confederate organizations engaged. These organizations are mentioned by name 445 times upon the historical tablets, or over four times to each organization.

All organizations, Union and Confederate, have been recognized by markers at places where they had their principal engagements.

There were 26 Confederate and 25 Union batteries upon the field. The positions where these batteries did their notable fighting are marked by cannon mounted on cast-iron gun carriages—facsimiles of those in use during the battle. These cannon are about equally divided between the Union and Confederate forces.

The Fifty-fifth Illinois Infantry has placed a bronze tablet at its camp giving the list of killed of that regiment during the battle of Shiloh.

All tablets have been thoroughly painted and are in good condition.

Gun carriages.—At the time of the last report 150 gun carriages had been placed in position. Since then we have received 77, 60 of which during the year have been placed in position, leaving 17 yet to be erected.

The city of Columbus, Ga., having asked that a certain 12-pounder Howitzer upon our field, engraved "The Ladies Defender, Columbus, Ga.," should be sent to the city for mounting in the public park of that city, under your order the gun has been so sent.

Buildings and quarters.—No work has been done during the year in this except to keep up the necessary repairs.

Confederate graves.—The bodies of men killed at Shiloh, both Union and Confederate, were generally buried in trenches upon Tuesday after the battle by our forces. Upon April 9 General Bragg sent a flag of truce to General Grant and asked permission to send a detail to bury the Confederate dead, but General Grant refused this, telling him that

on account of the warm weather he had ordered our forces to bury all the dead the day before. The bodies of the Union soldiers were moved to the National Cemetery at Pittsburg Landing in 1867.

We have located nine burial trenches of the Confederates, ranging from 20 to 60 feet in length. Three of these are outside of the field upon the main road just beyond it, and six within the field.

For the six trenches that lie within the field, we are placing a concrete wall around them 12 inches high, and upon this wall at intervals of every 3 feet a 10-inch shell is placed. Then in the front center will be an iron tablet, "Confederate graves." The three trenches outside of the field we shall mark only with the tablet.

Report.—Maj. D. W. Reed, historian, has compiled a report upon the battle of Shiloh (with four maps) and the organizations engaged, giving the casualties of the battle. This report has been printed at the Government Printing Office, and is now being distributed among the survivors of the battle, from whom it is expected information may be obtained.

Road from Shiloh to Corinth.—The Commission has heretofore recommended an appropriation for a graveled road from the terminus of the Park road to Corinth, Miss., a distance of about 16 miles. A survey and estimate for such road has been made, and the cost will be about \$50,000.

Shiloh is now difficult of access except by steamer on the Tennessee River, requiring about two days' time in addition to the railroad trip to Paducah, Ky. With such road the trip from Corinth, Miss., a railroad center, can be made in two and one-half hours. The time required now from Corinth to Shiloh, depending upon the condition of the ordinary country road, is from three and one-half to seven hours, generally the latter. Often the road is absolutely impassable. Aside from the historical importance of the road, it being the road upon which the Confederate army marched from Corinth to Shiloh, and the Union army from Shiloh to Corinth, it is absolutely necessary in order that visitors may reach the park. The Commission again earnestly recommends such an appropriation.

Expenditures.—The expenditures since last report are as follows:

Salaries.....	\$11,500.00
Traveling expenses.....	331.40
Office expenses.....	1,456.62
Topography and maps.....	3,286.55
Engineering superintendence.....	2,956.20
Buildings and quarters.....	755.19
Clearing land.....	5,437.98
Roads and bridges.....	7,852.33
Monuments and markers.....	3,427.30
Cannon and gun carriages.....	5,737.47
Tablets and guide posts.....	707.96
Foundations for State monuments.....	1,078.00
Watchmen and guards.....	960.00
Total.....	45,487.00

Very respectfully, your obedient servant,

CORNELIUS CADLE, *Chairman.*

The SECRETARY OF WAR.

**REPORT OF THE VICKSBURG NATIONAL
MILITARY PARK COMMISSION.**

**REPORT OF THE VICKSBURG NATIONAL MILITARY PARK
COMMISSION.**

WAR DEPARTMENT,
VICKSBURG NATIONAL MILITARY PARK COMMISSION,
Vicksburg, Miss., July 3, 1903.

SIR: The Commission has the honor to herewith transmit its fifth annual report, for the fiscal year ending June 30, 1903.

The Commission desires to state that the repair of the "Shirley House" (\$3,000) appears under the item "Buildings and quarters."

Very respectfully,

WM. T. RIGBY, *Chairman.*

The SECRETARY OF WAR.

WAR DEPARTMENT,
VICKSBURG NATIONAL MILITARY PARK COMMISSION,
Vicksburg, Miss., July 3, 1903.

SIR: The Vicksburg National Military Park Commission has the honor to submit its report for the year ending June 30, 1903:

Park area.—Two tracts of land, additional to the park area as previously outlined, have been purchased—one, of W. A. Claver and wife (6.97 acres), for \$348.50; the other, of J. W. King et al. (5.02 acres), for \$502. The Commission renews the suggestions of the fourth annual report: That the Mosby tract (16.63 acres) be purchased to complete spur No. 4 of the south Union wing, on which Iowa avenue will be located, and that an additional tract (1.29 acres) be purchased and added to the north Union wing. The park area now contains 1,229.07 acres, costing \$50,802.98.

Topographical survey.—The survey of the ground, outside of the park area, used for camping sites by the Union Army has been completed by the engineer, and a topographical map of the park and the land adjacent thereto has been made by him, blueprint of which was transmitted to the Department.

Clearing land.—The clearing of the park will be a slow and somewhat difficult matter, for the reason that in places the ground is filled with the roots of shrubs and small trees, which send up fresh shoots when the top growth is cut off. Numerous thickets of plum and locust are especially troublesome. Repeated cuttings, extending through several years, will be necessary to subdue the undergrowth of all kinds and secure a sward of Bermuda grass over the entire park area. The grazing of cattle on it has been encouraged as much as possible, and good results have thereby been secured; but when monuments and tablets have been erected it may be necessary to change this policy, and depend entirely upon frequent and repeated cuttings to kill out the undergrowth.

Roadways.—The grading and drainage (culvert work) of Confederate avenue (8.19 miles) has been finished at a total cost, exclusive of

superintendence, of \$26,921.76. The work of making concrete gutters on that avenue, where needed, has been commenced and 989½ yards have been laid at a cost, exclusive of superintendence, of \$1,597.58. The grading and drainage (culvert work) of Union and Grant avenues combined (8.36 miles) will be finished, according to the terms of the contract for that work, by July 31 of the current year, at a total cost, exclusive of superintendence, of \$29,270. Eighty per cent of the work was completed at the close of the fiscal year. The Commission has given much attention to the difficult matter of finding, at a reasonable cost, a suitable material for metaling the avenues and believes that a superior quality of gravel very suitable for that purpose can be obtained near Rosetta, Miss., at an approximate cost of \$2.75 per cubic yard, distributed on the roadway and rolled. A road roller and a road machine have been purchased for \$447 and \$225, respectively.

Viaducts.—The three viaducts on Confederate avenue will be completed by August 31 of the current year at an aggregate cost, exclusive of superintendence, of \$46,559. The 12 viaducts on Union avenue are under contract and will all be completed by December 31 of the current year. Three are steel viaducts with substructures of masonry, and are being constructed by the Virginia Bridge and Iron Company, of Roanoke, Va., for \$26,890. The others are Melan arch viaducts or bridges, and are being constructed by William T. Young, of Nashville, Tenn., for \$39,000. The aggregate cost of the 12 viaducts will be \$65,890, exclusive of superintendence.

Tablet inscriptions.—One hundred and seven army, corps, division, brigade, and battle tablet inscriptions have been approved by the honorable Secretary of War and authority given to invite bids for their manufacture and setting on the park. As these inscriptions are of a permanent character, and probably will not be revised by the Department, it may be advisable to have them cast in bronze instead of iron. For this reason the Commission requested permission to submit bids for their manufacture in both materials. Thirty-four proposed position-tablet inscriptions were accepted by the Commission at its last meeting, April 28, 1903, and have been transmitted to the Department with a request for their approval, so far as found correct. As these inscriptions are also of a permanent character, authority was requested to invite bids for their manufacture in both bronze and iron.

Cannon and gun carriages.—No work has been done by the Commission under this head. When the Confederate army of Vicksburg was surrendered to General Grant, about 102 guns were in position on the Confederate line of defense (exclusive of the heavy guns on the river front line) and about 220 guns were in position on the Union investment line. The Commission desires to remount as many as possible of these guns in their old places, and seeks to be fully instructed as to the policy of the Department in the matter.

Shirley House.—The Shirley House (officially known as "White House") has been repaired at a cost of \$3,000, exclusive of the small cost of supervising the work. Its restoration to the condition and appearance existing at the beginning of the siege preserves a notable landmark of the battlefield, and is gratifying to the veterans of both armies.

Cession of jurisdiction.—The governor of Mississippi, by proclamation dated December 8, 1902, ceded jurisdiction to the United States over the tract of land conveyed by W. A. Claver and wife and over so much of the public roads in Warren County, State of Mississippi, as

may be necessary for the construction of Union and Grant avenues in the park, jurisdiction over the part of the public roads necessary for the construction of Confederate avenue having been conveyed by proclamation dated June 25, 1901.

Determining regimental and battery positions.—State commissions from Louisiana and Missouri (second visit) have visited the park to assist the Commission in locating the positions of their respective regiments and batteries on the lines of investment and defense. Twenty veterans (19 Union and 1 Confederate) have also visited the park for the same purpose, by authority of the Secretary of War for their travel. Valuable information has also been obtained from veterans who have visited the park at their own expense, and because of their interest in the work of the Commission.

Appropriations for State memorials.—Appropriations for this purpose have been made by State legislatures as follows: Iowa, \$150,000; Illinois, \$150,000 (an expenditure of \$250,000 authorized); Massachusetts, \$5,000; New Hampshire, \$5,000; New York, \$12,500; Ohio, \$56,000; Pennsylvania, \$15,000; Wisconsin, \$30,000. Massachusetts will, doubtless, have the honor of placing the first memorial on the park (the figure, in bronze, of a marching soldier, with musket at right-shoulder shift, standing on a Massachusetts boulder weighing about 20 tons, to be placed at the site of General Grant's headquarters in November of the current year).

Estimates.—The Commission respectfully submits the following estimate for the fiscal year ending June 30, 1905: For continuing the work of establishing the Vicksburg National Military Park, for the compensation of three civilian commissioners and the secretary and historian, for clerical and other services, labor, iron gun carriages, the mounting of siege guns, monuments, markers and historical tablets, maps, surveys, roads, bridges, restoration of earthworks, purchase and transportation of supplies and material—these and other necessary expenses, \$50,000.

The receipts and expenditures during the year were as follows:

RECEIPTS.

Balance on hand June 30, 1902, per fourth annual report...	\$99, 670. 91
Appropriation for fiscal year ending June 30, 1903.....	100, 000. 00
	<hr/> \$199, 670. 91

EXPENDITURES.

Salaries.....	\$14, 400. 00
Traveling expenses.....	952. 43
Office expenses.....	3, 004. 27
Land and conveyancing.....	350. 15
Topography and maps.....	1, 153. 83
Buildings and quarters.....	3, 770. 00
Clearing land.....	1, 378. 16
Roads and bridges.....	76, 496. 15
Monuments and markers.....	12. 50
Total expenditures.....	<hr/> 101, 517. 49
Balance on hand June 30, 1903.....	98, 153. 42
	<hr/> \$199, 670. 91

Very respectfully,

WM. T. RIGBY,
STEPHEN D. LEE,
JAMES G. EVEREST,
Commissioners.

The SECRETARY OF WAR.

REPORT OF THE BOARD OF COMMISSIONERS OF THE SOLDIERS' HOME.

THE SOLDIERS' HOME,
OFFICE OF THE BOARD OF COMMISSIONERS,
Washington, August 4, 1903.

SIR: Under the requirements of section 1 of the act of Congress approved March 3, 1883, prescribing regulations for the Soldiers' Home in the District of Columbia, I have the honor to submit the following report of the Board of Commissioners of the Soldiers' Home for the year ended June 30, 1903, and to invite attention to the following table showing the changes that have occurred in the number of beneficiaries during that period:

	Regular.	Temporary.	Total.
On the rolls June 30, 1902.....	1,352	47	1,399
Admitted since.....	329	200	529
Readmitted.....	211		211
Total.....	1,892	247	2,139
Withdrawn from the Home.....	326		326
Dropped, dismissed, etc.....	86	109	195
Died.....	98	3	101
Transferred to permanent roll.....		103	103
Total.....	510	215	725
Leaving on the rolls June 30, 1903.....	1,382	82	1,414

This shows an increase of 15 beneficiaries on the rolls since the last annual report.

The number (1,414) on the rolls June 30, 1903, is accounted for as follows:

Present at the Home, 871, 14 less than last year; on outdoor relief, 348; in the Government Hospital for the Insane, 31; on furlough, 67; absent sick in the general hospital at Fort Bayard, N. Mex., 95, and 2 are confined by civil authorities.

The daily average number of inmates present during the year was 924. Last year the average was 896, and the preceding year, 870.

The total number of deaths was 101. Last year it was 102. Of the 101 deaths 42 died in the Home hospital, 17 on outdoor relief, 3 near the Home, 3 in the Government Hospital for the Insane, 29 at the general hospital at Fort Bayard, 1 on furlough, 1 drowned in Home lake, and 5 died in their quarters at the Home.

During the year temporary relief was given to destitute discharged soldiers (volunteers and regulars), who were not entitled to admission

to the Home, to the extent of 7,266 meals, and 179 were provided with lodgings for a few nights each.

The following statement shows the amounts received and expended during the year, and the amount of the permanent fund of the Home deposited in the United States Treasury:

PERMANENT FUND.

Balance in the United States Treasury June 30, 1902.....	\$3, 120, 613. 01
Settlement by the Treasury Department during the year. \$743, 139. 39	
Amount withdrawn for current expenses	254, 000. 00
	<hr/>
Increase to permanent fund.....	489, 139. 39
	<hr/>
Balance in United States Treasury June 30, 1903	3, 609, 752. 40

ACCOUNT OF THE TREASURER OF THE HOME.

Remaining on hand June 30, 1902.....	\$15, 857. 22
Received during the year:	
From the permanent fund	254, 000. 00
Interest on the permanent fund	98, 638. 37
Effects of deceased inmates, subject to demand of legal heirs.....	449. 61
Miscellaneous receipts	6, 653. 10
	<hr/>
Total receipts	375, 598. 30
Disbursements:	
Current expenses	\$270, 126. 69
Permanent improvements	89, 059. 66
	<hr/>
Total disbursements.....	359, 186. 35
	<hr/>
Balance on hand June 30, 1903.....	16, 411. 95

As shown by the foregoing statement \$89,059.66 were expended during the year in permanent improvements and repairs, the details of which are given in the reports of the governor and treasurer of the Home.

Some of the principal items of current expenditure were as follows:

Subsistence	\$62, 166. 22
Clothing.....	22, 647. 41
Extra-duty pay to inmates.....	39, 688. 07
Outdoor relief.....	28, 882. 67
Fuel for Home.....	28, 416. 78
Expenses of inmates at hospital at Fort Bayard	25, 502. 48

The current expenses for the year were about \$18,000 more than the year before, due not so much to the increase of the number of inmates cared for as to the increase in the cost of food, clothing, fuel, and of other supplies necessary in the administration of the affairs of the Home. The food furnished the inmates has received special attention, and is reported as highly satisfactory in every respect.

In December last the Board authorized a change in the system of nursing in the hospital, and since January female nurses have been employed, which has proved very successful, as shown by the report of the attending surgeon.

The constant increase in the number of sick to be cared for, the necessity for providing suitable quarters for the female nurses, a solarium for the use of the sick, and other necessary features caused the Board to authorize the preparation of plans and specifications for the

construction of a suitable annex to the hospital in order to provide the accommodations required. The Secretary of War has approved the plans, and preparations are now well under way for the construction of the building.

Detailed plans and specifications are also being prepared, with the approval of the Secretary of War, for a new administration building, the present building being no longer suitable for the purpose.

The Board has also under consideration the construction of a new mess hall, with additional dormitories to meet increasing demands, and as necessity existed for the service of an experienced officer to take charge of the preparation of the plans and the construction of the building, the Board recommended to the Secretary of War the detail of Capt. Chauncey B. Baker, quartermaster, and he was detailed as constructing officer by Special Orders, No. 26, Adjutant-General's Office, January 31, 1903.

It being deemed necessary to provide the services of a dentist for the inmates, the Board authorized, in December last, that a dental surgeon be employed at the Home, and that a well-equipped dental parlor be fitted up, and the attending surgeon's report shows that since January 1, 1903, 201 patients have been treated and that the total number of treatments was 803.

The treasurer's account of funds received for the inmate pensioners shows that he had on hand June 30, 1902, \$54,726.81; that he received during the year \$117,871.97, and paid to pensioners and legal heirs of deceased inmates \$119,573.53, leaving on hand, deposited in the United States Treasury, as required by law, \$53,025.25.

The pension money of inmates is paid quarterly to the treasurer by the United States pension agent in this city, and is held by the treasurer in trust. It is paid monthly to the inmates under the supervision of the governor of the Home, whose report shows that of the 871 inmates 726 were receiving pensions ranging from \$6 to \$30, one receiving \$40 and one \$50 per month.

There are 155 beneficiaries who served in the war with Mexico, 391 who served in the civil war, and 409 who served in the army since the commencement of the war with Spain. A total of 955 beneficiaries who had war (other than Indian war) service.

The nativity of beneficiaries is about one-half American, one-fourth Irish, one-sixth German, and the balance are natives of other countries. Their ages range from 21 to 85 years. One hundred and six are over 70 years of age.

The attending surgeon reports that 805 patients were treated in the hospital; that the daily average was 109.74, and the average age of patients admitted was 55.21; that 3,088 were treated at sick call, and the proportion of deaths to 100 inmates per annum was 5.17.

The sanitary condition of the Home and grounds have been excellent throughout the year. The water supply and drainage are satisfactory, and there has been no prevalent or epidemic disease among the inmates.

The account of the farm and dairy shows that the cultivation of the farm and the establishment of the dairy have proved profitable in producing early and late vegetables and better quality of milk than can be supplied by contract.

The act of Congress approved January 19, 1891, requiring the treasurer to keep the current funds on deposit in the Treasury of

the United States has been complied with, and all supplies for the Home which could be conveniently purchased by contract were so procured.

The library of the Home now contains 8,636 volumes. Eleven daily and 16 weekly papers and 18 monthly magazines are provided. The daily average number of books issued was 81.

Brig. Gen. William H. Forwood, surgeon-general, a member of the Board, was retired from active service September 7, 1902, and was succeeded as a member of the Board by Brig. Gen. Robert M. O'Reilly.

Brig. Gen. George D. Ruggles, U. S. Army, retired, was relieved as governor of the Home January 10, 1903, by Brig. Gen. Hamilton S. Hawkins, U. S. Army, retired.

Bvt. Brig. Gen. Reuben F. Bernard, colonel, U. S. Army, retired, was relieved as deputy governor of the Home January 10, 1903, by Col. Edward B. Williston, U. S. Army, retired.

Brig. Gen. Marshall I. Ludington, Quartermaster-General, a member of the Board, was retired April 13, 1903, and Brig. Gen. Charles F. Humphrey appointed his successor.

The duties devolved upon the officers of the Home have been performed by them in a highly satisfactory manner and the welfare of its inmates have received every consideration.

Attention is especially invited to the report of the governor of the Home, which, with the accompanying papers (reports of the attending surgeon and treasurer of the Home), are required to be published with this report for distribution to the Army.

Very respectfully,

NELSON A. MILES,
Lieutenant-General United States Army,
President Board of Commissioners.

The SECRETARY OF WAR.

REPORT OF THE GOVERNOR OF THE SOLDIERS' HOME.

GOVERNOR'S OFFICE, UNITED STATES SOLDIERS' HOME,
Washington, D. C., July, 19, 1903.

SIR: I have the honor to transmit my annual report for the year ending June 30, 1903, with the reports of the attending surgeon and of the secretary and treasurer of the Home.

Under Special Orders, No. 268, Adjutant-General's Office, November 14, 1902, I assumed the duties of governor of the Soldiers' Home January 10, 1903.

Schedule of admissions to the Home.

Permanent beneficiaries June 30, 1902	1,352
Admitted during the year ending June 30, 1902	329
Readmitted during the year ending June 30, 1903	211
Total	1,892
Dropped:	
By voluntary withdrawal	326
For absence without leave	38
For misconduct at guardhouse, Fort Bayard, N. Mex	13
For not reporting at guardhouse, Fort Bayard, N. Mex	1
By order of the Board of Commissioners	4
From outdoor relief	20
Dismissed	9
Abandoned the Home	1
Died	98
	510
Permanent beneficiaries June 30, 1903	1,382
Temporary inmates:	
Present June 30, 1902	47
Admitted during the year	200
	247
Total temporary beneficiaries	247
Transferred to permanent rolls	103
Dropped	106
Dismissed	3
Died	3
	215
Remaining temporary inmates, including 1 in insane asylum	32
Total beneficiaries June 30, 1903	1,414

Of whom 871 are inmates of the Home present, 348 receive outdoor relief, 31 are in insane asylum, 67 are on furlough, 95 are absent sick in general hospital, Fort Bayard, N. Mex., and 2 are confined by civil authority.

Decrease in the number of temporary inmates for the year, 15; increase in the number of regular inmates for the year, 30. The aggregate is 15 more than was shown last report.

Of the 101 deaths reported 42 occurred in Home hospital, 3 in insane asylum, 17 on outdoor relief, 29 at general hospital, Fort Bayard, N. Mex., 1 on furlough, 1 was

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found drowned in Home lake, 3 occurred near the Home, 2 in their quarters at the Home, 3 en route from quarters to Home hospital.

Daily average number of inmates present during the year ending June 30, 1903, 924. Last report the average was 896 and the preceding year 870.

Temporarily admitted for medical treatment	69
Denied admission	16
Number applying for readmission	223
Granted outdoor relief	40
Denied outdoor relief	33
Number applying for outdoor relief	73
Inmates present having service in Mexico	31
Inmates on outdoor relief having service in Mexico	124
Total inmates having service in Mexico, of whom 35 had service in the civil war	155
Inmates present having service in the civil war	316
Inmates absent having service in the civil war	75
Total inmates having service in the civil war	391
Inmates present having service since the commencement of the war with Spain	235
Inmates absent having service since the commencement of the war with Spain	174
Total inmates having service since the commencement of the war with Spain	409

List of delinquencies committed during the year ending June 30, 1903.

Drunkenness	127
Absence without leave	74
Drunk and disorderly	39
Disobedience of orders	2
Neglect of duty	1
Introducing liquor into the Home	9
Disorderly conduct	1
Destroying Home property	4
Disposing of Home clothing	1
Assaulting other inmates	1
Total number of offenses	259
Number of inmates tried once	85
Number of inmates tried twice	41
Number of inmates tried three times	17
Number of inmates tried four times	4
Number of inmates tried five times	1
Number of inmates tried six times	2
Number of inmates tried eight times	1
Total number of inmates tried	151
Number of inmates tried for drunkenness	91
Number of trials for drunkenness	127
Number of inmates tried for absence without leave	32
Number of trials for absence without leave	74
Number of inmates tried for other offenses	28
Number of trials for other offenses	58
Total number of inmates tried	151
Total number of inmates not tried	1,401
Per cent of inmates tried, 10.	

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Number of pensioners present at the Home and rate of pension.

Rate per month.	Number.	Rate per month.	Number.
\$6.....	126	\$20.....	3
\$8.....	111	\$22.....	2
\$10.....	56	\$24.....	20
\$12.....	227	\$25.....	1
\$12.50.....	1	\$27.....	9
\$14.....	51	\$30.....	9
\$15.....	2	\$40.....	1
\$16.....	25	\$50.....	1
\$17.....	87		
\$18.....	2	Total.....	726

Nativity of inmates present and absent June 30, 1903.

Born in—	Number.	Born in—	Number.
United States.....	681	France.....	9
Ireland.....	323	Russia.....	7
Germany.....	231	Holland.....	4
England.....	55	Belgium.....	2
Scotland.....	13	Roumania.....	2
Canada.....	29	Italy.....	2
Austria-Hungary.....	12	Cuba.....	2
Switzerland.....	15	Syria.....	1
Denmark.....	9		
Sweden and Norway.....	17	Total.....	1,414

Ages of inmates present at the Home June 30, 1903.

Age.	Number.	Age.	Number.
21 years.....	1	55 years.....	42
22 years.....	1	56 years.....	46
23 years.....	2	57 years.....	36
25 years.....	4	58 years.....	30
26 years.....	3	59 years.....	39
27 years.....	8	60 years.....	30
28 years.....	8	61 years.....	28
29 years.....	6	62 years.....	22
30 years.....	3	63 years.....	30
31 years.....	3	64 years.....	22
32 years.....	12	65 years.....	23
33 years.....	8	66 years.....	25
34 years.....	10	67 years.....	29
35 years.....	5	68 years.....	27
36 years.....	2	69 years.....	14
37 years.....	12	70 years.....	21
38 years.....	7	71 years.....	15
39 years.....	5	72 years.....	12
40 years.....	7	73 years.....	22
41 years.....	6	74 years.....	8
42 years.....	8	75 years.....	10
43 years.....	9	76 years.....	8
44 years.....	9	77 years.....	11
45 years.....	8	78 years.....	6
46 years.....	10	79 years.....	2
47 years.....	19	80 years.....	6
48 years.....	11	81 years.....	1
49 years.....	13	82 years.....	1
50 years.....	18	83 years.....	3
51 years.....	16	85 years.....	1
52 years.....	18		
53 years.....	20	Total.....	871
54 years.....	29		

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Length of service of inmates present at the Home June 30, 1903.

Length of service.	Number.	Length of service.	Number.
3 months	1	13 years	20
4 months	1	14 years	16
5 months	3	15 years	21
6 months	4	16 years	20
7 months	3	17 years	18
8 months	2	18 years	35
9 months	5	19 years	30
10 months	2	20 years	95
11 months	2	21 years	74
1 years	22	22 years	48
2 years	49	23 years	41
3 years	75	24 years	28
4 years	24	25 years	24
5 years	48	26 years	20
6 years	21	27 years	7
7 years	12	28 years	6
8 years	12	29 years	1
9 years	19	30 years	1
10 years	23		
11 years	20		
12 years	18		
		Total	871

Home library.

Number of books on hand June 30, 1903:

Fiction	3, 128
Travel	281
Biography	461
Poetry	228
History	665
Military and naval	352
Sports, games, etc	60
Religious	113
Bound volumes of magazines	1, 830
Miscellaneous	1, 520
Total	8, 636

Periodicals in reading room:

Daily papers	11
Weekly papers	16
Monthly magazines	18
Number of books issued during the year	24, 264
Average daily issue of books	81

NEW BUILDINGS.

By Special Orders, No. 26, Headquarters of the Army, Adjutant-General's Office, January 31, 1903, charge of the plans, specifications, estimates, and construction of proposed new buildings at the Home was committed to an officer of the Quartermaster's Department.

It is presumed that breaking of the ground for construction of proposed new buildings will not be much longer delayed.

EXTRA-DUTY MEN AND CIVILIAN EMPLOYEES.

Two hundred and forty-six of the inmates are employed on extra duty as noncommissioned officers, clerks, janitors, electricians, kitchen and dining-room attendants, ward masters, waiters, and nurses in hospital, carpenters, painters, assistant plumber, assistant blacksmiths, stablemen, teamsters, gatekeepers, saddler, and as laborers on the roads and grounds and on the farm.

THE HERD.

The herd now consists of 2 bulls, 62 cows, 9 heifers. The milk is of good quality.

TUBERCULOSIS PATIENTS.

At the United States general hospital at Fort Bayard, N. Mex., for the treatment of consumptives, there have been admitted since last report as inmates of the Home, 160 discharged soldiers, 12 from the Home and 148 direct from the Army, and 89 former inmates have been readmitted, 184 have been discharged at their own request, 12 for misconduct, and 29 died.

The total number of inmates of the Home treated there for the past year is 320.

The total number now remaining there is 95.

The expense to the Home on this account, including clothing and transportation, for the fiscal year amounted to \$27,498.38.

DISCIPLINE.

The rules of discipline have been duly enforced.

ENTERTAINMENTS AT STANLEY HALL.

Entertainments were given at Stanley Hall during the autumn, winter, and spring at an expense, exclusive of light and heat, of \$993.

THE BILLIARD, AMUSEMENT, SMOKING AND READING ROOMS, MUSEUM, AND LIBRARY.

These are kept in good order, under charge of noncommissioned officers, and are constantly used and enjoyed by the men.

THE BAND.

The band consists of the band leader, Mr. John S. M. Zimmerman, 5 inmates, and 12 civilians. In the summer season it gives open-air concerts, two per week at the hospital and five at the Home. In the winter the five at the Home are given in Stanley Hall. It also furnishes music for all entertainments at Stanley Hall and for memorial services and funerals at the cemetery.

RELIGIOUS SERVICES.

Roman Catholic, Lutheran, and Episcopal services are held each Sunday in the chapel.

Funeral services for deceased inmates of the Roman Catholic faith are attended by the Roman Catholic chaplain, and of the deceased Protestant inmates by the Episcopal chaplain.

IMPROVEMENTS.

A macadamized roadway from Scott's statue to the ivy gate, and a similar one to the coal vaults and around the pump house, has been constructed.

Sewer and drain pipes have been laid from the stables to the bridge on road leading to the east gate, and from the Anderson Building to the main sewer.

A new organ with electric motor has been placed in the chapel.

Brick sidewalks parallel with the roadways in the Home grounds are in course of construction.

H. S. HAWKINS,
Brigadier-General, U. S. Army, Governor.

The SECRETARY BOARD OF COMMISSIONERS OF THE SOLDIERS' HOME,
Washington, D. C.

REPORT OF THE ATTENDING SURGEON OF THE SOLDIERS' HOME.

UNITED STATES SOLDIERS' HOME,
Washington, D. C., June 30, 1903.

SIR: I have the honor to submit the following report of the medical department of the Home for the year ending June 30, 1903:

	1903.	1902.	1901.	1900.
Patients remaining in hospital from last report.....	94	93	105	82
Patients admitted to hospital during the year.....	711	557	485	540
Total treated in hospital.....	805	650	590	622
Returned to the Home, recovered, mostly acute cases.....	363	285	288	239
Returned to the Home, improved, mostly chronic cases.....	217	172	122	165
Returned to the Home, unimproved, incurable.....	53	47	43	59
Sent to the United States Hospital for the Insane.....	13	12	12	9
Died in hospital.....	42	36	31	39
Dead when brought to hospital.....	6	4	1	6
Remaining in hospital at present date.....	111	94	93	105
Total.....	805	650	590	622

Ages of patients admitted.

	1903.	1902.	1901.	1900.
Under 20 years.....	0	0	0	1
From 20 to 29 years.....	55	44	52	59
From 30 to 39 years.....	95	74	83	79
From 40 to 49 years.....	96	69	74	80
From 50 to 59 years.....	149	163	138	128
From 60 to 69 years.....	185	119	75	100
From 70 to 79 years.....	113	80	54	69
From 80 to 89 years.....	17	8	8	18
From 90 to 99 years.....	1	0	1	1
Age of the youngest..... years..	22	22	21	19
Age of the oldest..... do.....	92	88	90	91
Average age of patients admitted..... do.....	55.21	53.48	50.97	52.39
Greatest number of patients at one time.....	122	117	109	106
Least number of patients at one time.....	94	90	89	69
Daily average of patients in hospital.....	109.74	103.97	99.96	86.48

Diseases for which patients were admitted to hospital.

Abscesses and infections.....	18	Diseases of bladder and prostate.....	23
Alcoholism.....	95	Diseases of eye.....	14
Arthritis.....	11	Diseases of heart and arterics.....	49
Cancer.....	5	Diseases of intestines, with diarrhea.....	29
Constipation.....	24	Diseases of kidneys.....	12
Contusions and sprains.....	19	Diseases of liver and glands.....	14
Debility, nervous and general.....	45	Diseases of lungs and pleura.....	71
Epilepsy.....	9	Diseases of nerves.....	8
Fever, malarial.....	6	Diseases of rectum.....	7
Fever, influenza, etc.....	20	Diseases of spinal cord and brain.....	14
Fractures and dislocations.....	10	Diseases of skin.....	21
Gunshot wounds.....	3	Diseases of stomach.....	58
Hernia.....	4	Diseases of blood.....	2
Pulmonary tuberculosis.....	15	Diseases, mental.....	12
Rheumatism.....	69	Diseases, venereal.....	24

This list exhibits only the diseases complained of by the patients at the time of admission to the hospital and does not include the numerous complications, operations, nor secondary affections arising during the course of treatment. The principal troubles are tuberculosis, chronic rheumatism, heart disease, hernia, catarrh, epilepsy, dyspepsia, and constipation. Many of the men are affected with two or more of these diseases at the same time and yet may be admitted for some minor complaint not connected with either.

The 3,088 cases treated at sick call are not included in the above list of diseases.

Necrology.

Name.	Age.	Nativity.	Last served in company and regiment.	Died.	Cause of death.
1902.					
Pinchin, William	52	United States	A, 1st Cav.	July 8	Aortic insufficiency.
Simarc, Paul	66	Canada	B, 3d Inf.	July 9	Senile dementia.
Atkins, William H.	57	United States	Com. sergt.	July 23	Interstitial nephritis.
Lally, Edward ^a	72	Ireland	D, 2d Art.	Aug. 12	Drowned in lake; suicide.
Jackson, Joseph	78	do	B, 4th Cav.	Aug. 13	Cirrhosis of liver.
Lannon, Edward	71	do	D, 4th Cav.	Aug. 26	Cancer of stomach.
Duggan, Lawrence	70	do	K, 5th Art.	Sept. 2	Arterio-sclerosis.
Murphy, Daniel	56	do	A, 1st Art.	Oct. 1	Hemiplegia.
Thomas, John H.	71	United States	G, Mtd. Rifles	Oct. 4	Senile debility.
Miller, Charles	68	Germany	F, 18th Inf.	Oct. 9	Cancer of jaw.
Keenan, John	30	United States	I, 6th Cav.	Oct. 11	Typhoid fever.
Webster, Elliott	26	do	G, 21st Inf.	do	Amebic dysentery.
Collins, Thomas M. ^a	52	Ireland	C, 17th Inf.	Oct. 20	Valvular disease of heart.
Gorman, William	55	Germany	B, 2d Art.	Oct. 22	Syngomyella.
Murphy, William	68	Ireland	2d Dragoons	Oct. 28	Senile debility.
McMahon, Daniel	60	do	F, 6th Inf.	Nov. 10	Fracture of hip and ribs.
Hughes, Michael A.	43	do	9th Fd. Art.	Nov. 20	Diabetes mellitus.
Hanlon, Henry ^a	58	United States	E, 8th Inf.	Dec. 16	Valvular disease of heart.
Walter, Michael	91	Switzerland	G, 4th Art.	Dec. 21	Senile debility.
Mabrey, York	51	United States	L, 10th Cav.	Dec. 30	Valvular disease of heart.
1903.					
Mooney, Patrick	59	Ireland	L, 1st Art.	Jan. 1	Apoplexy.
Sheets, Samuel	83	United States	H, 4th Inf.	Jan. 4	Senile debility.
O'Connor, Edward	44	do	M, 11th Inf.	do	Amebic dysentery.
Kilroy, Patrick	56	Ireland	Ordnance	Jan. 12	Apoplexy.
Doyle, Thomas	71	do	I, 2d Drag.	Jan. 20	Valvular disease of heart.
Wines, Norman T.	26	United States	K, 3d Cav.	do	Apoplexy.
Edwards, Wm. D.	51	do	Com. sergt.	Jan. 24	Locomotor ataxia.
Fiedfort, Albert	67	France	Band, gen. ser.	Feb. 3	Arterio-sclerosis.
Miller, Chas. E. ^a	76	United States	C, 8th Inf.	Feb. 8	Aneurism of aorta.
Burke, Edward	75	Ireland	E, 4th Art.	Feb. 17	Senile debility.
Smith, Augustus	59	United States	I, 24th Inf.	Feb. 23	Interstitial nephritis.
Boyle, James	80	Ireland	A, 2d Art.	Feb. 24	do.
Butler, William	55	United States	D, 11th Inf.	Mar. 1	Meningeal hemorrhage.
Wilbur, Jay F.	37	do	H, 18th Inf.	Mar. 6	Aortic insufficiency.
Murphy, John J.	71	Ireland	I, 19th Inf.	do	Arterio-sclerosis.
Meinart, Charles	75	Germany	I, 7th Inf.	Mar. 7	Senile debility.
Wood, William P.	80	United States	D, Mtd. Rifles	Mar. 20	do.
Olsen, Jens	72	Denmark	E, 23d Inf.	Mar. 26	Chronic nephritis.
Holt, Peter	69	Canada	G, 9th Inf.	Mar. 30	Mitral insufficiency.
Diercks, John F. ^a	61	Germany	B, 1st Inf.	Apr. 4	Aortic insufficiency.
Beebe, Harvey	84	United States	B, 10th Inf.	do	Senile debility.
Hunter, Nathan E. ^a	59	do	H, 5th Art.	Apr. 17	Heart disease.
Hancock, William	70	do	L, 3d Art.	Apr. 23	Pneumonia.
Bühler, John A.	72	Germany	I, 3d Inf.	Apr. 28	Mitral insufficiency.
Adams, Frank	46	United States	E, 3d Art.	Apr. 30	Acute alcoholism.
Conway, John	73	Ireland	E, 12th Inf.	May 1	Senile debility.
Langdon, James W.	68	United States	L, 3d Art.	May 6	Apoplexy.
White, William	61	do	I, 17th Inf.	May 8	Chronic nephritis.

^a Dead when brought to hospital.

The daily average of inmates present at the Home was: For 1900, 838; for 1901, 853; for 1902, 895; for 1903, 927.

Proportion of deaths to 100 inmates per annum.

Year.	Per cent.	Year.	Per cent.
1903	5.17	1901 (9 months)	3.75
1902	4.68	1900	5.37

Number of prescriptions compounded during the year..... 17,500
 Applications for treatment at sick call 3,088
 Number of out-patients connected with the Home treated..... 375

Statement of expenses from treasurer's records.

	1903.	1902.	1901.	1900.
Average number of men, including attendants...	171	157	147	130
Subsistence	\$15,675.27	\$14,763.87	\$9,058.05	\$9,493.71
Cost of medicines	2,820.96	2,123.22	1,506.41	1,704.32
Attendants	12,159.94	10,012.02	7,352.56	7,876.80
Ice				52.04
Fuel	2,410.75	2,072.00		2,060.39
Gas	212.50	125.80	79.11	95.50
Laundry	722.96	488.08	249.55	190.54
Stationery	109.43	123.38	90.59	98.85
Bedding	420.12	319.26	343.65	1,658.85
Repairs	1,226.61	1,849.53	1,089.68	2,444.06
Instruments and appliances	208.58	839.10	281.88	448.18
Books	160.85	105.08	121.20	141.05
Furniture	344.93	1,711.56	391.60	1,776.03
Photographic and X-ray supplies	180.20	224.36	152.73	
Dental supplies	751.52			
Miscellaneous	42.31	29.42	296.29	52.23
Total	38,446.93	34,786.18	21,429.13	28,704.80
Cost per man per day	61.59	60.70	53.89	60.28

Monthly statement of expenses of hospital from July 1, 1902, to June 30, 1903, furnished by the treasurer.

	Amount.		Amount.
<i>July, 1902.</i>		<i>September, 1902—Continued.</i>	
Subsistence	\$1,056.46	X-ray and photographic supplies	\$24.60
Gas	6.00	Compensation to inmates	787.64
Pay, clinical assistant	100.00	Total	2,256.90
Pay, ambulance driver	15.00		
Extra washing	46.66	<i>October, 1902.</i>	
Material for screen doors, etc	53.59	Subsistence	1,069.14
Articles for police	19.41	Gas	13.50
Hardware	4.00	Pay, clinical assistant	100.00
Household articles	17.30	Pay, ambulance driver	15.00
Drayage	1.50	Extra washing	46.48
Medical and hospital supplies	320.75	1 barrel of kerosene and turpentine	27.20
Medical books	32.25	Legs for table	1.95
X-ray and photographic supplies	2.00	Incandescent lamps	188.00
Compensation to inmates	740.40	Household articles	40.70
	2,233.51	Articles for police	20.29
		Hardware	5.57
<i>August, 1902.</i>		Electric motor	59.50
Subsistence	1,041.75	Drayage and freight	5.23
Gas	13.00	Medical and hospital supplies	631.23
Pay, clinical assistant	100.00	Medical books	17.75
Pay, ambulance driver	15.00	X-ray and photographic supplies	10.39
Extra washing	44.66	Compensation to inmates	740.00
Rubber coat and boots	5.50	Total	2,991.62
50 gallons ammonia oil	15.30		
Articles for police	19.78	<i>November, 1902.</i>	
Rubber stops, copper, etc	7.49	Subsistence	1,173.62
Household articles	116.61	Gas	12.30
1,050 incandescent lamps	195.00	Pay, clinical assistant	200.00
Medical and hospital supplies	66.82	Pay, ambulance driver	15.00
Medical books	13.15	Extra washing	47.03
Stationery	4.20	Repairs to volt meter, etc	47.60
Compensation to inmates	741.00	Fire log in clinical assistant's quarters	39.60
	2,399.26	Glass, hardware, etc	13.25
		Hot water heater and traps	37.54
<i>September, 1902.</i>		Thermometer, pipe fittings	11.89
Subsistence	1,117.31	Repairs to ambulance	4.40
Gas	13.50	Express charges .....	.75
Pay, clinical assistant	100.00	Animals for experiment	23.50
Pay, ambulance driver	15.00	Painting bathrooms, etc	105.00
Extra washing	59.14	Household articles	9.51
Articles for police	17.79	Articles for police	18.96
Aluminum powder and bronze	45.00	Medical and hospital supplies	71.82
Express charges	1.35	Medical books	6.50
Hardware, etc	13.75	Stationery	13.58
Stationery and printing	20.10	X-ray and photographic supplies	5.40
Medical and hospital supplies	80.12	Compensation to inmates	746.00
Medical books	11.55	Total	2,602.75

Monthly statement of expenses of hospital from July 1, 1902, to June 30, 1903, furnished by the treasurer—Continued.

	Amount.		Amount.
<i>December, 1902.</i>		<i>March, 1903—Continued.</i>	
Subsistence	\$1,542.55	Medical and hospital supplies	\$75.92
Gas	23.90	Dental supplies	28.45
Pay, clinical assistant	200.00	Stationery	5.44
Pay, ambulance driver	15.00	X-ray and photographic supplies	35.70
Extra washing	61.47	Compensation to inmates	711.30
Repairs to morgue equipment	73.88	Pay, sisters and nurses	66.00
Household articles	18.96	Total	3,434.66
Repairs to steam pipe	5.90		
Hardware	4.97	<i>April, 1903.</i>	
1 reflector for morgue	7.50	Subsistence	1,569.82
Medical and hospital supplies	140.73	Gas	17.40
Stationery	9.51	Pay, clinical assistant	200.00
Compensation to inmates	758.40	Pay, dentist	150.00
Total	2,862.77	Pay, ambulance driver	15.00
<i>January, 1903.</i>		Extra washing	87.33
Subsistence	1,381.00	Pajamas, towels, etc	66.75
Gas	36.30	Linoleum, chair tips	43.58
Pay, clinical assistant	200.00	Hardware, lumber	23.38
Pay, dentist	150.00	Articles for police	18.81
Pay, ambulance driver	15.00	Household articles	37.40
Extra washing	54.40	Glass counter top, matting	73.63
1 rubber mat and turpentine	27.50	Plumbing repairs	16.45
Lumber for cupboards, etc	38.54	1 barrel turpentine	22.00
Hardware and covering for pipe	33.42	Medical books	20.00
Household articles	48.85	Medical and hospital supplies	1,017.74
Articles for police	23.85	Dental supplies	28.08
Dental outfit and supplies	667.61	Stationery, etc	12.55
Instruments, etc	150.25	X-ray and photographic supplies	20.98
Medical and hospital supplies	144.37	Compensation to inmates	725.36
Medical books	20.00	Pay, sisters and nurses	66.00
Stationery	12.60	Total	4,222.26
X-ray and photographic supplies	18.12		
Compensation to inmates	718.60	<i>May, 1903.</i>	
Pay, sisters and nurses	28.70	Subsistence	1,409.40
Total	3,769.11	Gas	7.70
<i>February, 1903.</i>		Pay, clinical assistant	200.00
Subsistence	1,373.43	Pay, dentist	150.00
Gas	24.90	Pay, ambulance driver	15.00
Pay, clinical assistant	200.00	Extra washing	70.67
Pay, dentist	150.00	8 chairs	6.40
Pay, ambulance driver	15.00	1 desk	13.00
Extra washing	60.89	8 praying stands	45.76
Kerosene oil and glass	6.55	Articles for police	23.86
Re-covering chairs	5.50	Hardware	2.86
3 stamps, 2 razors	5.50	Instruments, etc	55.33
Gas fixtures and hardware	11.30	Medical and hospital supplies	29.52
Bed trays, bath tub	73.20	Dental supplies	17.65
Household articles	22.87	X-ray and photographic supplies	20.00
Articles for police	19.66	Compensation to inmates	697.00
Drayage and freight	4.48	Pay, sisters and nurses	66.00
Plumbing supplies	63.08	Total	2,830.15
Repairing instruments	3.00		
Medical and hospital supplies	163.40	<i>June, 1903.</i>	
Medical books	20.00	Subsistence	1,569.96
Stationery	13.45	Gas	25.70
X-ray and photographic supplies	14.41	Pay, clinical assistant	200.00
Compensation to inmates	713.90	Pay, dentist	150.00
Pay, sisters and nurses	59.50	Pay, ambulance driver	15.00
Total	3,024.02	Extra washing	77.97
<i>March, 1903.</i>		Kerosene oil	5.80
Subsistence	1,370.83	Clock	10.00
Gas	17.70	1 pair of Howe scales	22.50
Pay, clinical assistant	200.00	Repairs to range	13.15
Pay, dentist	150.00	Rubber sheeting	35.60
Pay, ambulance driver	15.00	Articles for police	33.08
Extra washing	66.26	Household articles	139.78
Repairs to ambulance, etc	59.75	Coal	2,410.75
Articles for police	22.24	Medical and hospital supplies	79.04
Household articles	196.91	Dental supplies	9.73
Pillows, towels, bedding, etc	317.77	Stationery	18.00
Hardware and plumbing repair	18.50	Medical books	29.65
Dressing carriage	40.00	X-ray and photographic supplies	28.60
Blackboard, shades	16.86	Compensation to inmates	697.70
Electrical supplies	20.03	Pay, sisters and nurses	66.00
		Total	5,637.51

*Annual report of receipts and expenditures on account of the United States Soldiers' Home, District of Columbia, from July 1, 1902, to June 30, 1903,
by Maj. Henry M. Kendall, U. S. Army, secretary and treasurer.*

Receipts and expenditures.	1902.						1903.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	
RECEIPTS.													
From the United States Treasurer upon resolutions of the Board of Commissioners, approved by the Secretary of War.....	\$23,651.94			\$24,261.14	\$22,000.00	\$30,000.00	\$25,564.74	\$30,000.00	\$45,000.00	\$25,140.55	\$25,000.00	\$29,000.00	\$254,000.00
From interest on permanent fund.....				193.14	30.24		84.08	29.47	33.36	39.62	5.40		449.61
From effects of deceased inmates subject to demand of legal heirs.....	2,715.68	830.51	407.89	290.53	534.09	368.12	303.50	286.27	271.61	185.89	329.28	129.75	6,653.10
From miscellaneous sources.....													
Total.....	26,379.57	33,852.91	40,407.89	24,744.81	22,564.33	30,368.12	25,972.27	30,315.74	45,304.97	25,366.06	25,334.68	29,129.75	359,741.08
EXPENDITURES.													
Repairs to officers' quarters.....	90.87	3.60	71.01	347.06	49.84	30.25	17.95	72.07	81.81	44.35	29.67	86.20	924.68
Compensation of the governor, deputy governor, treasurer, and secretary to Board of Commissioners.....	392.91	392.91	372.91	372.91	372.91	372.91	379.86	383.33	383.33	383.33	383.33	383.33	4,533.97
Transportation furnished to discharged soldiers en route to the Home and refunded to the Quartermaster's Department.....	17.50	22.05	13.70	35.75	19.55	23.83	43.90	5.21	28.04	60.13	22.50	53.02	350.18
Fuel for the Home.....		1,159.94	1,560.86	398.79	3,657.95	4,108.88	8,620.10	3,974.29	320.88	1,900.36	2,475.23	225.50	28,416.78
Expenses of the hospital for drugs, druggists' supplies, photographic and X-ray supplies, running expenses, pay of clinical assistant, dentist—except subsistence, gas, and compensation to inmates.....	921.33	501.21	849.16	406.73	974.16	437.37	1,271.53	901.28	1,135.41	1,085.55	2,048.67	553.39	10,595.79
Refunded to claimants as heirs of deceased soldiers.....		96.77		141.87		32.07		14.37	86.94	12.32	36.32		420.46
Refunded to claimants as heirs of deceased inmates.....		45.20		191.90	66.30			53.89	122.49	39.09	16.64	2.20	537.65
Clothing for inmates.....	18.00	695.55	7,094.84	3,079.13	226.93	14.50	823.13	13.00	8,891.23	2,230.10			22,647.41
Subsistence stores and ice.....	4,736.38	4,917.87	4,202.11	4,897.64	5,590.23	5,331.65	5,910.92	5,319.56	5,184.79	5,092.91	5,235.00	5,757.16	62,166.22
Mess and kitchen utensils; articles for police purposes; beds, bedding, blankets; upholsterers' material, etc.....													
Expenses of the farm and dairy—utensils for lawns and grounds; seeds; guano; manure; cultivation and ornamentation of lawns, and pay of miscellaneous civilian employees.....	1,693.30	1,607.42	1,581.13	1,854.36	2,040.52	1,729.03	1,810.09	1,935.23	1,914.96	2,043.49	1,905.48	2,937.55	23,052.56

General repairs to buildings, roads, fences, harness; repairs to and purchase of vehicles; purchase of mechanical tools, etc.	735.09	306.45	436.96	735.21	769.23	686.38	567.69	460.91	874.76	1,011.51	1,228.20	8,567.27
Forage and medicines, purchase of articles used in stables	227.33	351.70	29.49	475.53	606.52	442.45	549.78	553.56	776.14	448.62	550.65	6,886.72
Incidental expenses—rental of telephone; hack hire; traveling expenses; professional services; freight; telegrams; amusements; stationery, etc., for governor's and treasurer's offices, and office of Board of Commissioners.	252.42	62.00	296.67	237.79	325.74	262.98	349.41	292.80	335.01	190.65	180.03	3,041.64
Religious services	171.00	171.00	171.00	171.00	171.00	171.00	171.00	171.00	171.00	171.00	171.00	2,062.00
Laundry work for Home and hospital.	262.85	285.34	271.34	300.89	285.89	304.15	278.90	257.93	247.32	273.67	255.16	3,304.36
Compensation to inmates of the Home and hospital, nonpensioners, except compensation to inmates employed on roads and grounds	2,883.75	2,900.80	2,873.64	2,828.40	2,842.84	2,906.35	2,879.20	3,030.83	3,003.96	3,027.50	3,124.84	35,133.78
Gas for Home and hospital	31.00	33.00	39.20	52.60	36.10	47.10	69.80	52.10	40.50	37.40	26.20	500.70
Funeral expenses of members of the Home residing outside	50.00	25.00	25.00	.....	.....	25.00	25.00	25.00	.....	.....	25.00	225.00
Lumber and trimmings for coffins	110.02	55.58	.....	145.42	.....	29.90	183.46	27.00	155.21	27.80	142.10	876.49
Commutation of members of the Home residing outside	299.47	206.67	190.00	208.00	6,746.00	236.00	184.00	6,850.00	190.00	284.00	6,606.20	28,882.67
Board and medical treatment of members of the Home in the Government Hospital for the Insane	1,477.14	.....	1,451.43	.....	.....	1,607.14	.....	.....	1,714.29	.....	.....	6,250.00
Permanent improvements, paving gutters, grading and terracing, care of lawns, improvement of road to Scott hill.	5,576.39	3,178.99	2,176.33	3,115.98	4,194.98	2,975.20	2,500.30	3,397.96	3,614.14	3,945.07	4,244.24	42,710.61
Expenses for board and medical treatment, including transportation, etc., for members of the Home in United States general hospital at Fort Bayard, N. Mex.	1,627.60	1,596.93	2,062.28	2,190.11	2,013.80	2,374.84	2,651.62	2,367.21	2,659.82	2,147.94	2,069.49	25,502.48
Compensation to inmates working on roads	350.78	346.40	343.70	457.40	375.90	364.00	399.35	338.91	496.20	359.60	862.60	4,534.29
Purchase of animals, horses, cows, etc.	.....	300.00	840.00	.....	740.00	285.00	335.00	.....	.....	335.00	.....	2,305.00
Expenses of Home library for books, periodicals, newspapers, magazines, stationery, stamps for inmates nonpensioners, bookbinding, etc.	88.16	79.82	36.43	27.22	23.72	255.58	23.69	20.33	55.74	24.22	35.75	697.50
Completion of new calf barn, improvement in old dairy barn, concreting interior court of same	944.55	1,284.80	1,462.77	498.02	290.94	823.35	403.07	389.35	878.69	875.46	203.55	8,635.29
Improvements at chapel, purchase of vestments, organ, etc., for divine service	260.62	372.90	400.62	379.79	35.74	12.00	.....	53.15	.....	960.00	42.15	2,765.10
Improvements at pump house incidental to the installation of an electric power plant	385.25	631.12	1,772.45	613.42	.....	190.74	13.70	.....	87.63	230.26	87.00	17,070.31

Annual report of receipts and expenditures on account of the United States Soldiers' Home, District of Columbia, etc.—Continued.

Receipts and expenditures.	1902.						1903.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	
EXPENDITURES—continued.													
Construction of a tunnel leading from hospital to dead house, construction of lift for dead bodies from tunnel to morgue.....	\$5.75	\$3.00	\$3.00	\$3.00	\$389.25	\$6.00	\$212.06						\$1,017.00
Purchase of spectacles and trusses.....					4.50		18.00	\$5.25	\$3.00	\$16.50		\$10.50	78.50
Payment for labor filling silo at dairy.....													95.01
Partial payment for labor grading Scott hill.....				426.10									426.10
Total expenditures.....	23,667.36	22,194.89	46,785.82	26,769.21	26,775.56	32,292.00	34,369.52	24,965.47	36,131.20	28,692.52	\$26,772.72	29,769.78	359,186.35

BOARD OF COMMISSIONERS SOLDIERS' HOME, D. C. 265

*Receipts and expenditures of the United States Soldiers' Home, District of Columbia, etc.—
Continued.*

RECAPITULATION.

RECEIPTS.

Balance on hand July 1, 1902.....	\$15,857.22
From the United States Treasurer upon resolutions of the Board of Commissioners, approved by the Secretary of War.....	254,000.00
From interest on permanent fund.....	98,638.37
From effects of deceased inmates, subject to demand of legal heirs.....	449.61
From miscellaneous sources.....	6,653.10

EXPENDITURES.

Repairs to officers' quarters.....	\$924.68
Compensation of the governor, deputy governor, treasurer, and secretary to Board of Commissioners.....	4,533.97
Transportation furnished to discharged soldiers en route to the Home.....	350.18
Fuel for the Home.....	28,416.78
Expenses of the hospital for drugs, druggists' supplies, photographic supplies for X-ray machine, running expenses, pay of clinical assistants, except subsistence, gas, and compensation to inmates.....	10,595.79
Refunded to claimants as heirs of deceased soldiers.....	420.46
Refunded to claimants as heirs of deceased inmates.....	537.65
Clothing for Home and hospital.....	22,647.41
Subsistence stores and ice for Home and hospital.....	62,166.22
Mess and kitchen utensils, articles for police purposes, beds, bedding, upholsterers' materials, etc.....	4,023.88
Expenses of farm and dairy, utensils for lawns and grounds, seeds, manure, cultivation, and ornamentation of lawns, and pay of miscellaneous civilian employees.....	23,052.56
General repairs to buildings, roads, and fences; repairs to vehicles, purchase of mechanical tools.....	8,567.27
Forage, medicines, and articles used in Home stables.....	6,836.72
Incidental expenses, rental of telephone, hack hire, traveling expenses, professional services, freights, telegrams, amusements, stationery for officers and Board of Commissioners.....	3,041.64
Religious services.....	2,052.00
Laundry work for Home and hospital.....	3,304.36
Compensation to inmates of the Home and hospital, nonpensioners, except compensation to inmates employed on roads and grounds.....	35,133.78
Commutation to members of the Home who reside outside.....	28,882.67
Gas for Home and hospital.....	500.70
Funeral expenses of members of the Home who reside outside.....	225.00
Lumber and trimmings used in making coffins at the Home.....	876.49
Permanent improvements, paving gutters, sewerage, grading, terracing, reflooring wards in hospital, labor filling silo, grading Scott hill.....	43,231.72
Board and medical treatment of members in United States Government Hospital for the Insane.....	6,250.00
Board and medical treatment, transportation, etc., of members in United States general hospital, Fort Bayard, N. Mex.....	25,502.48
Compensation to inmates working on roads and grounds.....	4,534.29
Purchase of animals, cows and horses.....	2,305.00
Expenses of the Home library for books, periodicals, newspapers, stationery, etc.....	697.50
New calf barn, concreting and improvements to dairy, and old cow barns, etc., at dairy.....	8,635.29
Payment for improvements to chapel, vestments, carpets, furniture, and painting.....	2,765.10
Addition to pump house incidental to the installation of an electric and power plant for use of hospital, dairy, stables, and chapel.....	17,079.31
Tunnel connecting hospital with morgue for purpose of transferring dead bodies from hospital to morgue.....	1,017.00
Payment for trusses and spectacles.....	78.50
Balance on hand June 30, 1903.....	16,411.95
Total.....	375,598.30

Comparative statement of money received and disbursed on account of the United States Soldiers' Home, Washington, D. C., from July 1, 1901, to June 30, 1903.

Received from July 1, 1901, to June 30, 1902.....	\$334,353.49
Expended from July 1, 1901, to June 30, 1902.....	318,496.27
Balance on hand June 30, 1902.....	15,857.22
Received from July 1, 1902, to June 30, 1903.....	375,598.30
Expended from July 1, 1902, to June 30, 1903.....	359,186.35
Balance on hand June 30, 1903.....	16,411.95
Expenditures during the year ending June 30, 1902, for new buildings and permanent improvements.....	65,708.18
Running expenses during the year ending June 30, 1902.....	252,788.09
Expenditures during the year ending June 30, 1903, for new buildings and permanent improvements.....	89,059.66
Running expenses during the year ending June 30, 1903.....	270,125.69
Average cost per man for year ending 30, 1903.....	225.06

Annual report of receipts and expenditures on account of the United States Soldiers' Home, District of Columbia, etc.—Continued.

Receipts and expenditures.	1902.						1903.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	
EXPENDITURES—continued.													
Construction of a tunnel leading from hospital to dead house, construction of lift for dead bodies from tunnel to morgue.....	\$5.75	\$3.00	\$3.00	\$3.00	\$389.25	\$6.00	\$212.06						\$1,017.00
Purchase of spectacles and trusses.....				95.01	4.50		18.00	\$5.25	\$3.00	\$16.50		\$10.50	78.50
Payment for labor filling silo at dairy.....													95.01
Partial payment for labor grading Scott hill.....				426.10									426.10
Total expenditures.....	23,667.36	22,194.89	46,785.82	26,769.21	26,775.56	82,292.00	34,389.52	24,965.47	36,131.20	28,692.52	\$26,772.72	29,769.78	\$59,186.35

BOARD OF COMMISSIONERS SOLDIERS' HOME, D. C. 265

*Receipts and expenditures of the United States Soldiers' Home, District of Columbia, etc.—
Continued.*

RECAPITULATION.

RECEIPTS.

Balance on hand July 1, 1902.....	\$15,857.22
From the United States Treasurer upon resolutions of the Board of Commissioners, approved by the Secretary of War.....	254,000.00
From interest on permanent fund.....	98,638.87
From effects of deceased inmates, subject to demand of legal heirs.....	449.61
From miscellaneous sources.....	6,653.10

EXPENDITURES.

Repairs to officers' quarters.....	\$924.68
Compensation of the governor, deputy governor, treasurer, and secretary to Board of Commissioners.....	4,533.97
Transportation furnished to discharged soldiers en route to the Home.....	350.18
Fuel for the Home.....	28,416.78
Expenses of the hospital for drugs, druggists' supplies, photographic supplies for X-ray machine, running expenses, pay of clinical assistants, except subsistence, gas, and compensation to inmates.....	10,595.79
Refunded to claimants as heirs of deceased soldiers.....	420.46
Refunded to claimants as heirs of deceased inmates.....	537.65
Clothing for Home and hospital.....	22,647.41
Subsistence stores and ice for Home and hospital.....	62,166.22
Mess and kitchen utensils, articles for police purposes, beds, bedding, upholsterers' materials, etc.....	4,023.88
Expenses of farm and dairy, utensils for lawns and grounds, seeds, manure, cultivation, and ornamentation of lawns, and pay of miscellaneous civilian employees.....	23,052.56
General repairs to buildings, roads, and fences; repairs to vehicles, purchase of mechanical tools.....	8,567.27
Forage, medicines, and articles used in Home stables.....	6,896.72
Incidental expenses, rental of telephone, hack hire, traveling expenses, professional services, freights, telegrams, amusements, stationery for officers and Board of Commissioners.....	3,041.64
Religious services.....	2,052.00
Laundry work for Home and hospital.....	3,304.36
Compensation to inmates of the Home and hospital, nonpensioners, except compensation to inmates employed on roads and grounds.....	35,133.78
Commutation to members of the Home who reside outside.....	28,882.67
Gas for Home and hospital.....	500.70
Funeral expenses of members of the Home who reside outside.....	225.00
Lumber and trimmings used in making coffins at the Home.....	876.49
Permanent improvements, paving gutters, sewerage, grading, terracing, reflooring wards in hospital, labor filling silo, grading Scott hill.....	43,231.72
Board and medical treatment of members in United States Government Hospital for the Insane.....	6,250.00
Board and medical treatment, transportation, etc., of members in United States general hospital, Fort Bayard, N. Mex.....	25,502.48
Compensation to inmates working on roads and grounds.....	4,534.29
Purchase of animals, cows and horses.....	2,305.00
Expenses of the Home library for books, periodicals, newspapers, stationery, etc.....	697.50
New calf barn, concreting and improvements to dairy, and old cow barns, etc., at dairy.....	8,635.29
Payment for improvements to chapel, vestments, carpets, furniture, and painting.....	2,765.10
Addition to pump house incidental to the installation of an electric and power plant for use of hospital, dairy, stables, and chapel.....	17,079.31
Tunnel connecting hospital with morgue for purpose of transferring dead bodies from hospital to morgue.....	1,017.00
Payment for trusses and spectacles.....	78.50
Balance on hand June 30, 1903.....	16,411.95
Total.....	375,598.80

Comparative statement of money received and disbursed on account of the United States Soldiers' Home, Washington, D. C., from July 1, 1901, to June 30, 1903.

Received from July 1, 1901, to June 30, 1902.....	\$334,353.49
Expended from July 1, 1901, to June 30, 1902.....	318,496.27
Balance on hand June 30, 1902.....	15,857.22
Received from July 1, 1902, to June 30, 1903.....	375,598.80
Expended from July 1, 1902, to June 30, 1903.....	359,186.35
Balance on hand June 30, 1903.....	16,411.95
Expenditures during the year ending June 30, 1902, for new buildings and permanent improvements.....	65,708.18
Running expenses during the year ending June 30, 1902.....	252,788.09
Expenditures during the year ending June 30, 1903, for new buildings and permanent improvements.....	89,059.66
Running expenses during the year ending June 30, 1903.....	270,126.69
Average cost per man for year ending 30, 1903.....	225.06

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Average cost per man per month.....	\$18.754
Average number of inmates for year ending June 30, 1903.....	924
Average cost of ration per month, including vegetables and milk produced on Home grounds.....	5.66
Average cost of ration per diem.....	.1844

I certify that the foregoing statement is correct.

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

Statement of the Soldiers' Home permanent fund account from June 30, 1902, to June 30, 1903.

Date.		Partial amounts.	Dr.	Cr.
1902.	Balance			\$3,120,612.71
Aug. 28	Amount of deposits.....	\$385,976.91		
1903.				
Mar. 28	.....do	46,681.52		
May 26	.....do	310,480.96		
				743,139.39
1902.	Less amount paid from permanent fund.....	33,000.00		
Aug. 8	.....do	40,000.00		
Sept. 8	.....do	22,000.00		
Nov. 5	.....do	30,000.00		
Dec. 6	.....do			
1903.				
Feb. 3	.....do	30,000.00		
Mar. 6	.....do	45,000.00		
May 14	.....do	25,000.00		
June 13	.....do	29,000.00		
	Balance		\$254,000.00	
			3,609,752.10	
	Total		3,863,752.10	3,863,752.10

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

Statement of the Soldiers' Home interest account from June 30, 1902, to June 30, 1903.

	Partial amounts.	Dr.	Cr.
Balance July 1, 1902			\$23,651.94
Interest on balance, \$3,120,612.71, from July 1 to Sept. 30, 1902.....	\$23,404.60		
Interest on deposits from Aug. 28 to Sept. 30, 1902.....	1,078.63		
			24,483.23
Interest on balance, \$3,433,589.62, from Oct. 1 to Dec. 31, 1902.....	25,751.92		
			25,751.92
Interest on balance, \$3,381,589.62, from Jan. 1 to Mar. 31, 1903.....	25,361.92		
Interest on deposits from Mar. 28 to 31, 1903.....	15.35		
			25,377.27
Interest on balance, \$3,353,271.14, from Apr. 1 to June 30, 1903.....	25,149.53		
Interest on deposits from May 26 to June 30, 1903.....	918.68		
			26,068.21
Less interest on principal paid—			
Third quarter of 1902.....	222.09		
Fourth quarter of 1902.....	167.18		
First quarter of 1903.....	236.72		
Second quarter of 1903.....	141.53		
		\$767.52	
Less interest paid—			
Third quarter of 1902.....	23,651.94		
Fourth quarter of 1902.....	24,261.14		
First quarter of 1903.....	25,584.74		
Second quarter of 1903.....	25,140.55		
		98,638.37	
Balance.....		25,926.68	
Total.....		125,332.57	125,332.57

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

BOARD OF COMMISSIONERS SOLDIERS' HOME, D. C. 267

The treasurer of the United States Soldiers' Home, Washington, D. C., in account with the inmate pensioners for moneys received under section 4, act approved March 3, 1883, and deposited with the Treasurer of the United States, Washington, D. C.

Date.	Moneys received.	Amount.
1902.		
July 1	To balance on hand	\$54,726.81
30	To pension agents' check	481.98
Aug. 20	.....do	608.46
Sept. 30	.....do	27,831.94
Oct. 28	.....do	1,210.94
Nov. 25	.....do	799.96
Dec. 26	.....do	28,304.31
1903.		
Jan. 21	.....do	1,011.66
Feb. 21	.....do	27.90
Mar. 28	.....do	28,190.06
Apr. 29	.....do	850.01
May 22	.....do	2,585.28
June 24	.....do	26,479.67
	Total	172,598.78

Date.	Moneys disbursed.	Amount.
1902.		
July 21	By amount transferred to Home fund under section 4, act approved Mar. 3, 1883	\$2,418.00
31	By pension pay roll for July, 1902	1,476.13
Aug. 31	By pension pay roll for August, 1902	1,252.46
Sept. 30	By pension pay roll for September, Fort Bayard, N. Mex.	1,139.30
30	By pension pay roll for September, 1902	22,857.24
Oct. 30	By pension pay roll for October, 1902	2,017.41
Nov. 18	By amount paid estate of Edward Lally, deceased	126.00
20	By amount paid estate of William Bloom, deceased	456.00
30	By pension pay roll for November, 1902	721.20
Dec. 18	By amount refunded to John R. King, pension agent	106.00
31	By pension pay roll for December, Fort Bayard, N. Mex.	1,563.00
31	By pension pay roll for December, 1902	24,746.40
1903.		
Jan. 31	By pension pay roll for January, 1903	1,120.66
Feb. 21	By amount paid estate of Thomas Doyle, deceased	32.00
25	By amount paid estate of William D. Edwards, deceased	507.00
28	By pension pay roll for February, 1903	749.57
Mar. 31	By pension pay roll for March, Fort Bayard, N. Mex.	1,765.76
31	By pension pay roll for March, 1903	23,437.43
Apr. 10	By amount paid estate of Elisha Jackson, deceased	132.00
28	By amount paid estate of Harvey Beebe, deceased	36.00
30	By pension pay roll for April, 1903	1,566.54
May 6	By amount paid estate of Augustus Smith, deceased	1,022.00
20	By amount paid estate of John J. Murphy, deceased	24.00
31	By pension pay roll for May, 1903	3,496.38
June 20	By pension pay roll for June, Fort Bayard, N. Mex.	1,317.30
30	By pension pay roll for June, 1903	25,492.80
	Balance in United States Treasury	53,025.25
	Total	172,598.78

I certify on honor that the above account is correct.

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

Annual report of the number of pensioners in the United States Soldiers' Home, District of Columbia, rates of pension, etc., June 30, 1903.

Pensioners drawing—		Pensioners drawing—Continued.	
\$6 per month	192	\$20 per month	5
\$8 per month	153	\$22 per month	3
\$10 per month	62	\$24 per month	24
\$11.25 per month	1	\$25 per month	1
\$12 per month	323	\$27 per month	2
\$12.50 per month	1	\$30 per month	14
\$14 per month	57	\$40 per month	1
\$15 per month	2	\$50 per month	2
\$16 per month	28		
\$17 per month	101	Total	979
\$18 per month	2		

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Pensioners present in the Home:	
Pensioners whose money is drawn by the treasurer	721
Pensioners who have assigned their certificates	5
	726
Pensioners absent:	
On outdoor relief	253
Total number of pensioners June 30, 1903	979
Total number of pensioners June 30, 1902	1,001
Alterations since last report, June 30, 1902:	
New certificates received for inmates	43
Admitted and readmitted	263
	306
Loss by discharge	229
Loss by death	53
	282
Net gain during the year	24
Description of certificates:	
Army, general law	600
Army, act of June 27, 1890	178
Army, war with Spain	92
Army, Mexican war	101
Army, Indian war	2
Navy, general law	4
Navy, act of June 27, 1890	2
Total	979

NOTE.—There are 17 pensioners in the Government Hospital for the Insane whose money is drawn by the treasurer.

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

Statement relative to members of the Home on outdoor relief from July 1, 1902, to June 30, 1903.

Average number from July 1, 1902, to June 30, 1903	347
Total amount paid for outdoor relief during the year ending June 30, 1903	\$28,882.67
Average amount paid per man for one year	83.24
Average amount paid per man for one month	6.94
Highest amount paid per man for one month	8.00
Lowest amount paid per man for one month	2.00

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

Report of members of the United States Soldiers' Home receiving outdoor relief June 30, 1903, rates of relief, pensions, etc.

Receiving outdoor relief:		Receiving pensions—Continued.	
\$8 per month	292	\$16 per month	3
\$7 per month	1	\$17 per month	14
\$4 per month	2	\$20 per month	2
\$2 per month	53	\$22 per month	1
Total	348	\$24 per month	4
Receiving outdoor relief June 30, 1902	360	\$27 per month	1
Net loss during the year	12	\$30 per month	5
Of the number receiving outdoor relief there are nonpensioners	95	\$50 per month	1
Receiving pensions:		Total	253
\$6 per month	66	Nonpensioners	95
\$8 per month	42	Total	348
\$10 per month	6	Of this number there are:	
\$11.25 per month	1	Mexican war survivors	128
\$12 per month	101	Men who have served 25 years or over	53
\$14 per month	6	Of the latter number there are nonpensioners	10

Seventeen members of the Home on outdoor relief died since date of last report. Eleven members were dropped from outdoor relief after June 30, 1902, in compliance with resolutions of the Board of Commissioners dated July 22, 1902.

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

BOARD OF COMMISSIONERS SOLDIERS' HOME, D. C. 269

Annual report of expenditures on account of members of the Home at United States general hospital, Fort Bayard, N. Mex., for the year ending June 30, 1903.

Date.	Maintenance.	Transportation.	Coffins, including freight.	Freight on clothing.	Total.
1902.					
July	\$1,549.29	\$202.60			\$1,751.89
August	1,711.43		\$48.54		1,759.97
September	1,957.86	18.00			1,975.86
October	2,105.71	49.15	41.90	\$93.37	2,230.13
November	1,951.43	85.05			2,036.48
December	2,342.86	62.40			2,405.26
1903.					
January	2,486.43	31.98			2,518.41
February	2,307.14		280.39		2,587.53
March	2,886.57	31.20		19.62	2,937.39
April	2,063.57			11.50	2,075.07
May	4,067.86	83.40	87.58		4,238.84
June	2,112.86		28.18		2,141.04
Total	25,055.61	563.78	486.59	64.49	26,169.87

NOTE.—Clothing shipped to Fort Bayard by the governor of the Home is not charged in this account.

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

Farm and dairy account, United States Soldiers' Home, from July 1, 1902, to June 30, 1903, consolidated.

DR.	CR.
To labor, forage, fertilizers, seeds, implements, repairs, and purchase of animals.....	By 36½ bushels onions
Balance to credit of farm and dairy..	By 15,182 bunches onions.....
Total	By 960 bunches parsley.....
	By 73½ bushels parsnips.....
	By 1,256 bunches rhubarb.....
	By 109½ bushels spinach.....
	By 453½ bushels tomatoes.....
	By 217½ bushels turnips.....
	By 250 tons ensilage put up in silos.....
	By 500 bushels beets fed to cattle.....
	By 400 bushels turnips fed to cattle.....
	By 66 tons of hay.....
	By 31,306 gallons of milk at 20 cents.....
	By sale of 2 cows.....
	By sale of 59 calves.....
	By 15 tons green fodder.....
	By 20 tons dry fodder.....
	By value of live stock.....
	By 200 tons of hay harvested on hand.....
	Total

The herd on June 30, 1903, consisted of 2 bulls, 62 cows, 9 heifers, and 7 calves; also 1 horse and 7 mules.

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

Garden account of United States Soldiers' Home from July 1, 1902, to June 30, 1903.

DR.	CR.
To labor, fertilizers, seeds, tools, and implements.....	By 83,270 plants, trees, and shrubs raised in garden and greenhouses.....
Total	By 60 cords wood.....
	By balance to debit of garden expended in improvement of grounds.....
	Total

NOTE.—This department has the care of the ornamentation of the grounds, lawns, flowers, shrubs, trees, etc.

H. M. KENDALL,
Major, U. S. Army, Secretary and Treasurer.

REPORT OF THE INSPECTION OF THE SOLDIERS' HOME.

WAR DEPARTMENT, INSPECTOR-GENERAL'S OFFICE,
Washington, July 31, 1903.

SIR: In accordance with the requirements of the act of Congress of March 3, 1883, I have the honor to submit the following report of inspection of the Soldiers' Home, District of Columbia, made July 1 to 4, 1903:

OFFICERS.

The personnel of the officers of the Home is as follows: Governor, Brig. Gen. H. S. Hawkins, retired; deputy governor, Col. E. B. Williston, retired; secretary and treasurer, Maj. Henry M. Kendall, retired, and surgeon, Maj. L. A. La Garde, U. S. Army. Of the foregoing, General Hawkins and Colonel Williston were assigned to duty at the Home during the year, having relieved Gen. George D. Ruggles and Col. R. F. Bernard, respectively.

POPULATION.

The field return of the officers and inmates of the Home on July 1, 1903, shows a total of 1,414 inmates present and absent, of whom 871 were present and 543 absent. The absentees are accounted for as follows:

On outdoor relief.....	348
Sick at Fort Bayard.....	95
With leave.....	67
Insane.....	31
Without leave.....	2

The average number present during the year was 928.

One hundred and thirteen of the 871 inmates present were sick. As compared with the preceding year there is an increase of 15 inmates, which seems small considering the severe character of service of the army in the Philippine Islands.

The number of members receiving pensions was 979, the rates ranging from \$6 to \$50 per month. Of these by far the larger number receive \$12, followed in order by \$6, \$8, \$17, etc., and only two were receiving the maximum rate of \$50.

The highest number present during the year was 958, on January 31, 1903, and the lowest was 875, on June 21, 1903. The average number temporarily cared for during the year was 47.

The average age of members on June 30, 1903, was reported as 55.78 years, or 0.93 years less than for the preceding year. The average age of members for the past five years is as follows:

	Years.		Years.
1898.....	55.06	1901.....	59.33
1899.....	55.42	1902.....	56.71
1900.....	56.16		

BARRACKS.

A minute inspection of the barracks from top to bottom failed to disclose anything calling for criticism. The Scott Building and annex quartered 230, or about 30 per cent of the whole number of inmates present at date of inspection. The number quartered in the following buildings were:

Sheridan.....	163	Sherman.....	109
King	154	Anderson	35

The number of occupants varied with the size of the rooms, some of the larger ones having as many as eight. The men were neatly and properly dressed, presented a commendable appearance, and appeared to be satisfied and contented. Indications were not lacking to show the utmost care and attention on the part of the governor and his assistants to every detail of administration, and their efforts to add to the comfort of the inmates by making their surroundings as pleasant and congenial as possible. The absence of elevators in such large structures as the Scott and King buildings is inexcusable. Old men should not be compelled to go up three flights of stairs several times a day.

HOSPITAL.

The hospital was found in excellent condition throughout. It has capacity for 112 beds, but is to be enlarged so as to accommodate at least 150 patients. It is equipped with a static machine and X-ray apparatus. The operating room was a model of neatness and order. Take it all in all, the general appearance, order, neatness, and sanitation of this building is superior to any institution of the kind I have ever visited.

An electric-light plant was installed during the year at a cost of \$15,000.

The number of patients in the hospital on June 30, 1903, was 111, and the average number during the year was 109.74, an increase of 5.77 as compared with the preceding year. The principal diseases and percentage of each were as follows:

	Per cent.		Per cent.
Rheumatism	9.7	Disease of heart and arteries	6.8
Bronchitis	8.5	Debility, general and senile	6.3
Disease of stomach	8.1	Diarrheal	4.0

There was a total of 710 patients admitted to the hospital during the year, which is an increase of 153 over the previous year. There were 100 deaths among the members during the year, in the hospital and elsewhere, the average age at death being 54.94 years. The hospital employees numbered 62, of whom 40 are members and 22 civilians, at a total cost per annum of \$12,149.94.

FARM AND DAIRY.

There are 502 acres in the reservation, as follows:

	Acres.		Acres.
Pasturage	180	Lawn	42
Woodland	160	Garden	30
Farm	70	Buildings	20

The dairy was found in good police. One new cow barn was erected during the year at a cost of \$4,500, and the barnyard was concreted. There are 62 cows in the Home herd, and 31,306 gallons of milk were received from this source during the year, which was reported as not being quite sufficient for all the purposes of the Home, a small quantity having to be purchased outside. The number of men employed on the farm and garden averaged 30, of whom 8 were members and 22 civilians. The value of farm products during the year ended June 30, 1903, was \$14,029.38, and the cost of production, \$11,770.88, leaving a balance to the credit of the farm and dairy of \$2,258.50.

Value of farm products turned into commissary	\$1,243.78
Value of farm products fed to stock	2,022.40
Value of farm products on hand at close of year	4,509.00

The lawn and flower garden was maintained during the year at a cost of \$7,241.85.

Products of the farm and value by items compared with the preceding year.

Products.	Value.	Compared with preceding year.	
		Loss.	Gain.
Vegetables	\$1,603.78	\$1,220.61	.....
Ensilage put up in silos (250 tons)	1,250.00		\$1,250.00
Hay (68 tons)	1,082.40	541.61	.....
Hay, harvested, on hand (200 tons)	3,280.00		1,978.00
Milk (31,306 gallons, at 20 cents)	6,261.20		365.90
Cows (sale of 2)	72.50	7.50	.....
Calves (sale of 69)	427.00		155.00
Fodder (35 tons)	52.50		52.50
Total	14,029.38	1,769.72	3,801.40

It will be seen from the above table, as compared with the products of the farm for the preceding year, there is a net gain of \$2,031.68, the largest single item being in hay harvested and on hand.

DISBURSEMENTS.

The accounts and books of Maj. Henry M. Kendall, U. S. Army, retired, as treasurer, were inspected to June 30, 1903, and under the two funds the receipts and disbursements were as follows:

HOME FUND.

Balance on hand July 1, 1902	\$15,857.22
Received from United States Treasury	\$352,638.37
Received from sales	3,689.33
Received from collections	995.38
Transfer from pension fund	2,418.00
	<u>359,741.08</u>
Total to be accounted for	375,598.30
Disbursed as per vouchers:	
Paid by check	\$274,453.73
Paid by cash	84,732.62
	<u>359,186.35</u>
Balance on hand June 30, 1903	<u>16,411.95</u>

INSPECTION OF SOLDIERS' HOME, D. C.

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PENSION FUND.

Balance on hand July 1, 1902	\$54,726.81
Received from United States pension agent.....	117,871.97
Total to be accounted for.....	<u>172,598.78</u>
Paid to pensioners:	
By check	\$33,134.28
By cash.....	84,021.25
	<u>117,155.53</u>
Transferred to general fund	2,418.00
	<u>119,573.53</u>
Balance on hand June 30, 1903	<u>53,025.25</u>

DISTRIBUTION.

Balance of Home fund	16,411.95
Balance of pension fund.....	53,025.25
Total balance on hand June 30, 1903.....	<u>69,437.20</u>
Distributed as follows:	
On deposit in Treasury of United States.....	69,340.52
Cash in office safe.....	96.68
Total	<u>69,437.20</u>

The records of the Treasury Department show the following affecting the permanent and interest funds for the past year:

PERMANENT FUND.

Balance July 1, 1902	\$3,120,612.71
Credit settlement.....	743,139.39
Total	<u>3,863,752.10</u>
Drawn for current expenses	254,000.00
Balance June 30, 1903.....	<u>3,609,752.10</u>

INTEREST ACCOUNT.

Balance July 1, 1902	23,651.94
Interest on deposits.....	98,638.37
Total	<u>122,290.31</u>
Payments.....	88,108.30
Balance June 30, 1903.....	<u>34,182.01</u>

The total amount of the permanent fund and interest credit during the year was:

Permanent fund	\$743,139.39
Interest	98,638.37
Total income from the Treasury.....	<u>841,777.76</u>

This shows an increase in these accounts over last year of \$215,302.04.

The following statement shows the disbursements and receipts under the different headings for the year ended June 30, 1903:

EXPENDITURES.	
Current expenses.....	\$69,174.04
Subsistence	62,166.22
Clothing.....	22,647.41
Household.....	70,284.00
Hospital.....	10,595.79
Transportation.....	2,470.65
Construction.....	72,627.42
Repairs.....	8,567.27
Outdoor relief.....	28,882.67
Farm.....	11,770.88
Total	359,186.35

RECEIPTS.	
Amount on hand July 1, 1902.....	15,857.22
Received from permanent fund.....	254,000.00
Received from interest fund	98,638.37
Received from posthumous sources	794.08
Received from pension fund	2,418.00
Received from sales	3,689.33
Received from other sources, collections	201.30
Total	375,598.30

It will be seen from the foregoing that the total amount expended during the year was \$359,186.35, which is an increase of \$40,690.08 over the preceding year. The increased expenditures are shown under the items "household," "construction," "subsistence," "clothing," "hospital," and "transportation" in the order named, though under the first item, "household," the increase is \$34,206.84, or over 80 per cent of the total increase.

The average cost per capita for the year was \$276.04, as follows:

Subsistence	\$67.28
Clothing.....	24.04
Household.....	76.06
Current expenses.....	74.86
Hospital.....	11.47
Farm.....	12.74
Repairs.....	9.59
Total	276.04

This is an increase of \$24.75 over the preceding year, the largest increase being under the item "Household."

The accounts were well and correctly kept.

A sales voucher signed by the purchaser, such as is used in the Quartermaster's Department, is suggested and recommended rather than a memorandum signed by the treasurer or employee by whom the money was received.

SUPPLY DEPARTMENTS.

The condition of all supplies and stores was found to be good and indicated proper care and attention. The facilities for storage purposes are ample. The value of quartermaster stores on hand June 30, 1903, was as follows:

Current supplies	\$21,439.00
Clothing	6,247.85

The cost of property condemned during the past year was \$9,756, and the amount received from it by sale, \$1,252.46.

Purchases are generally made under contract. The contract price of the principal articles of food for the quarter ended June 30, 1903, was as follows:

Articles.	Cost.	Amount bought.
		<i>Pounds.</i>
Flour	per barrel.. \$3.95	52,920
Fresh beef	per pound.. .0779	44,400
Coffee	do..... .12	5,850
Tea	do..... .25	675
Bacon	do..... .11½	3,000
Salt pork	per barrel.. 17.90	1,200
Potatoes	per bushel.. .80	60,000
Fresh fish	per pound.. .06	4,500
Codfish	do..... .04½	1,920
Beans, navy	do..... .029	1,200
Ham	do..... .1142	5,100
Butter	do..... .32	480
Butter substitute	do..... .12	6,000
Sugar, A	do..... .0448	13,500
Sugar, C	do..... .0388	
Sugar, granulated	do..... .0467	600
Sirup	per gallon.. .22	156

EMPLOYEES.

The average number of employees and amount paid them was as follows:

Employees.	Number.	Amount.
Officers	3	\$3,334.18
Noncommissioned officers	28	4,265.70
Members	232	26,872.32
Civilians	145	58,384.30
Total	408	92,856.50
Average per employee		227.59

As compared with the preceding year, there is a net increase of 39 employees, all but 6 of whom are members, and the increase in the amount paid for salaries foots up \$7,593.50. The average annual salary per employee is \$2.66 less than for the previous year.

LAUNDRY.

The amount expended during the year for laundry work, which is done by outside contract, was \$3,304.36. The members are permitted to send 1 under and 1 over shirt, 1 pair of drawers, 1 pair of socks, 1 linen collar, 1 sheet, and 1 pillowcase to the laundry. This allowance may be increased if necessary. The average number of pieces laundered each month was 14,003.

CONTEMPLATED IMPROVEMENTS.

The present administration building is out of date and entirely inadequate. It is contemplated to erect a new building, on a site between the standpipe and the gate, at a cost of about \$40,000.

Owing to the increased demands upon the hospital it is contemplated to add a new wing to the rear of the present hospital building at an estimated cost of \$230,000. This improvement is intended to make the hospital of sufficient capacity to accommodate the demands upon it for all time. It is heated by a number of gravity boilers, requiring separate attendants and separate coal bins for each. It would seem to be better to centralize the heating plant for the entire building at a point without and near the present pumping station, and thus rid the building of the dust and dirt incident to the number of boilers now operated. In view of the fact that a cheaper grade of coal could be used, under the suggested circumstances, than the superior grade now used, economy would be added to cleanliness.

It is contemplated to erect a new mess hall in the rear of and facing Sherman Hall, forming a quadrilateral with the other buildings in that vicinity. The building will be three stories, the upper floors being used for dormitories for the men. It will be equipped with elevators and all of the most modern appliances and improvements. While the cost of the building has not yet been fully determined upon, it will be within a range of from \$300,000 to \$400,000. The construction of these buildings has been assigned to Maj. Chauncey B. Baker, Quartermaster's Department, U. S. Army.

The plan of having dormitories over the mess hall seems to be objectionable from several standpoints. First, it would add more or less heat to the second-story rooms. Second, it would flavor all the stories with the fumes of cooking food. Again, mess halls are often used for dancing and other amusements which, at such times, would cause distraction to the occupants above. Lastly, it would not be a mess hall proper, but a barrack with a mess hall below. They have such a mess hall at present in the Sherman Building.

MISCELLANEOUS NOTES.

The various buildings were found to be in excellent condition as to order and cleanliness. The condition of the grounds was such as to reflect the highest credit upon the present efficient administration. The driveways, some 9 miles in extent, were in fine repair, as were the walks. Additional sidewalks are being laid, which will add to the comfort and convenience of the old soldiers.

The discipline of the Home seems to be all that could be desired, the men appearing well behaved and orderly. Punishments for offenses are made as light as is compatible with the maintenance of a proper degree of discipline in an institution of this character. They consist mostly of light labor on the Home grounds.

The matter of food and cooking arrangements receives the personal attention of General Williston, the deputy governor, and each appear ample and satisfactory. The following was the bill of fare at the Home for July 1, 1903: Breakfast—Hash, rolled oats, milk, bread, butter, and coffee. Dinner—Soup, boiled beef, potatoes, green corn, pickles, bread, milk, and coffee. Supper—Beef stew, bread, butter, and tea.

The mess room is in the basement of the Sherman Building, and has capacity for seating 672 men at one time. It presented an excellent appearance. The kitchen is in the basement of the Scott Building. My attention was called to the amount of labor involved in getting the food supplies to the kitchen, the location of which is inconvenient in respect to the mess hall, and the latter is not satisfactory on account of an insufficient amount of light and lack of proper ventilation.

Facilities for the amusement of the members of the Home comprise theatrical performances, lectures, library, band concerts, billiards, pool, bagatelle, chess, backgammon, checkers, cards, dominoes, and quoits. The theater building, known as "Stanley Hall," is a handsome white-marble structure, in keeping with the beauty of the surroundings, with a seating capacity of 800. The library is conveniently located in respect to the cluster of barracks, and was found in good condition. There were 8,636 volumes on hand at date of inspection. The number of volumes purchased during the year was 349.

Religious services are held three times every Sunday and on holy days.

Two swans have been recently obtained by the governor and placed in the lake in the southwestern part of the reservation.

The band concerts are a source of much pleasure to the members of the Home.

The water supply and sewerage system of the Home is connected with the city system. There is in addition a water tower of 50,000 gallons capacity, so that a sufficient pressure appears to be assured in case of necessity. The protection against fire consists of a company of 50 men with hose and reel, buckets, ropes, ax detail, water plugs, fire extinguishers in each building, and buckets on each floor. The apparatus is frequently tested and was in good condition at date of inspection. There were no fires during the year.

The barn was found in good police. Some of the heavy wheel transportation was noticed outside and exposed to the weather. The best interests of the Government, from an economical standpoint, would seem to be subserved by the construction of sheds for its protection.

REMARKS.

In concluding this report it gives me pleasure to state that the Home seems to be managed to the satisfaction and great benefit of its many worthy inmates. In General Hawkins the institution has a most excellent governor, and the governor has an able assistant in Colonel Williston, both of whom are exceptionally well suited in ability and temperament to administer the Home in accordance with the best requirements of the country. The surgeon in charge of the hospital is entitled to great praise for the superb condition in which the building in its several parts was administered.

I was accompanied by Mr. William T. Kent, expert accountant, Inspector-General's Department, who rendered valuable assistance in the examination of the books and financial transactions of the Home.

Respectfully submitted.

G. H. BURTON, *Inspector-General.*

THE SECRETARY OF WAR.

**NATIONAL HOME FOR DISABLED VOLUNTEER
SOLDIERS.**

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**INSPECTION OF THE BRANCHES OF THE NATIONAL HOME FOR
DISABLED VOLUNTEER SOLDIERS.**

WAR DEPARTMENT,
INSPECTOR-GENERAL'S OFFICE,
Washington, November 18, 1903.

SIR: I have the honor to report that under your directions I made the annual inspection of the National Home for Disabled Volunteer Soldiers, as required by act of August 18, 1894, in connection with other investigations and inspections for the Army, as directed by the Secretary of War and Chief of Staff. The Battle Mountain Sanitarium at Hot Springs, S. Dak., was not visited, as it is still incomplete and without members.

The various Branches of the National Home, considered in the aggregate, were found in admirable condition. The few irregularities, omissions, defects, and instances of lack of order observed were called to the attention of the respective governors concerned and promises of correction received. The irregularities observed were very inconsequential in character, and, with them considered, it would be hard to improve on the general condition of these institutions.

The Board of Managers and the governors of the various Branches are to be highly commended for the efficiency, care, and management of their charge. The governors are uniformly kind and thoughtful to the members, and treat them with great forbearance and consideration. Where they are forced to use correctives it is done in a manner so fairly and justly, and with kindly intention so apparent, as to lead the members themselves to appreciate the justice of and reason for their punishment. These officers are also entitled to great credit for their efforts to furnish amusements for the old men, whose lives at best are filled with aches and troubles. All the Branches have fine bands of music, and most of them have lakes with boats for rowing and fishing; theaters, where well-selected performances are given once a week without cost directly to the individual members; amusement halls for innocent games; billiard halls and beer gardens, where restraint is limited to moderation in use, but sufficient to induce the members to stay within limits of the grounds rather than patronize outside grogeries. The grounds are ornamented with flowers in great profusion, and the walks and roads are kept like city parks. From observation I am convinced that nothing is left undone that could minister to the wants of these wards of the nation. Their food is of good quality, well cooked, and invitingly served, and everything about the dining rooms and kitchens of the various Branches is cleanliness and order personified. The discipline at the Branches generally is very good, and the general good feeling of members to their officers is but a just appreciation for effort and conscientious services given.

It occurred to me at the end of my journey, after visiting the various Branches of this institution, it would be largely in the interest of the general good should the governor of each Branch be ordered to visit and inspect the other Branches. This need not necessarily be accomplished in one year, but might consume several seasons to make the round. From my own experience as an inspector of the Army there is always great good to be obtained from visiting and observing the methods pursued by others. Some one man may have a genius for something in one line which would be useful to others for adoption, and in the end would redound to the general uplifting of all the Branches.

Another observation that struck me with force is that the time has arrived when, in my judgment, they should hire civilian help for the work in the offices, dining rooms, and kitchens, and possibly in the storehouses and shops. The members are, as a general rule, entirely too old to do any continuous amount of labor. They might still be used in light work around the grounds, in sweeping and keeping the roads, etc., in order.

CLOTHING.

The clothing issued to the members is generally acceptable, except that in the Branches in the Middle West and in the South a shirt of lighter weight for summer than that worn during the winter would add to the comfort of the members and be neater in appearance. The heavy all-wool stockings seem to be so objectionable that many of the members, for comfort sake, buy their own. It is suggested that to avoid the excessive shrinkage which shortens the life of the all-wool stockings an admixture of cotton would be advisable. Some complaint was made of the tongue piece of the shoes, which should, at least, be long enough to cover the full space between the lacing and the stocking. The drab hats, which on issue are apparently of good quality, are deficient in the quality or quantity of the sizing, as after their first wetting they lose their shape and become unsightly. Perhaps the quality of the felting is as good as can be obtained for the exceedingly low price (about 67 cents) per hat.

FARMS.

The appropriation for "Farm" seems to be a misnomer, as some of the Branches have a farm only in name. The reports show that this appropriation is used for three distinct purposes—the cultivation of the ground for the raising of farm and vegetable products, the care and ornamentation of the grounds, and the care and keeping of the animals and vehicles used for hauling about in the Home. As it is evidently the purpose of the division of the appropriation into heads to classify the disbursements under appropriate heads, and to determine and limit the cost of each, it is suggested that, as the products of the farm and vegetable garden accrue to the benefit of the subsistence of the members, all charges incident to the maintenance of these places should be provided for in the appropriation for "Subsistence," and as the expense entailed for all other hauling is for the general benefit of the Branch Home, it could well be assigned to the appropriation for "Current Expenses," and a separate and distinct appropriation be made for the care and ornamentation of the grounds. Such a distribu-

tion of the appropriation for "Farm" would seem to be logical and no explanation would be required to show, as at the Southern Branch, why it was necessary to pay 33 employees under the head of "Farm" when there is no farm, and only three acres used as a vegetable garden, from which \$332.58 worth of products was turned into the commissary.

GENERAL DEPOT.

In view of the generous and increased capacity for storage now provided for at the several Branches, it would seem to be a proper subject for consideration whether it would not be more economical to provide that all purchases of manufactured articles, such as hats, shoes, blankets, bedsteads, crockery, tableware, etc., be shipped direct to the point of use, and thus avoid the added expense of unpacking and packing at the general depot, and the double freight charges in many instances, as when shoes, hats, bedsteads, or other articles of like character are purchased from an Eastern firm, shipped to Dayton, Ohio, and then reshipped to, say, Togus, Me., Hampton, Va., or Johnson City, Tenn. As it is understood that the shippers in the first instance are responsible for the condition of the goods when received, the Home must stand any loss (of breakage in crockery, for instance), if any, on the reshipment. Under this method the appropriations for each Branch will be charged, as contemplated by law, with only the actual disbursement made for its maintenance.

The general depot reports show a large accumulation of property there, almost ten months' supply at the close of the fiscal year, before the appropriations for the incoming year were available, and this without reference to the stock on hand at the several Branch Homes. As such supplies do not usually improve with age, it is recommended that the stock be reduced one-third or to one-quarter's supply. With this reduction it is believed that the storage capacity of the present building used for depot purposes will be sufficient.

It is believed that much of the clerical work now expended on the required books would be avoided and the work simplified, especially in the adjutant's office, by the use of the "card system." As this method of record is no longer an experiment, having been adopted in the Departments at Washington and by many of the large corporations and business houses with decided economy of service and dispatch of business, it is recommended to the consideration of the Board of Managers.

The following pertains to the statistical matter, and is an aggregate of that obtaining at all the Branches:

POPULATION.

The total number of officers and members present and absent on June 30, 1903, was 27,401, of whom 19,187 were present, and 8,214 absent—a net gain of 228 over the preceding year. The net gains and losses by branches during the year were as follows:

Gains:	
Western Branch.....	232
Pacific Branch.....	217
Danville Branch.....	196
Central Branch.....	73
	<hr/> 718

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Losses:

Northwestern Branch.....	8
Marion Branch.....	56
Southern Branch.....	404
Eastern Branch.....	22
	<hr/> 490
Net gain.....	228

The average number provided for during the year was 27,463, of whom 20,547 were present and 6,916 were absent—an increase of 46 present and 338 absent over the preceding year. The total number cared for during the year was 33,157, an increase of 390 over the previous year. The maximum and minimum number present during the year were 21,515 and 18,444. The average per cent of members absent to the whole number present and absent was 27.3. The aggregate number of officers and members present at inspection was 20,375.

The average age of all the members for the year was 64.13, as against 63.90 for the previous year.

A comparison of the first admissions and deaths is herewith tabulated for the preceding ten years:

Year.	First admissions.	Deaths.	Deaths per cent of admissions.
1894.....	3,379	1,047	30.98
1895.....	3,383	1,060	31.33
1896.....	3,930	1,171	29.80
1897.....	2,900	1,165	40.02
1898.....	2,788	1,189	42.64
1899.....	3,153	1,379	43.73
1900.....	3,754	1,473	39.23
1901.....	3,983	1,752	43.99
1902.....	3,763	1,679	44.62
1903.....	3,582	1,863	52.01
	<hr/> 34,615	<hr/> 13,778	<hr/> 39.63

Should this rate continue not many years will elapse before the yearly deaths will equal or exceed the yearly first admissions.

THE SICK, DEATHS, ETC.

The condition and management of the hospitals generally at the various Branches is worthy of commendation. The wards, kitchens, halls, etc., were generally scrupulously clean, neat, and orderly. The bed and table linen was fresh and tidy. The operating rooms were well equipped with the latest devices, and each hospital at each Branch has an X-ray attachment installed. The hospital at the Western Branch was not as neat and orderly in some of its parts as the average of the others. The food and cooking in all were all that could be expected. In the aggregate they have a capacity for 2,822 patients, and in addition there are quarters for 607 convalescents, the daily average of sick being 2,417 in hospitals, 581 in convalescent quarters, and 546 in barracks. The whole number admitted to the hospitals during the year was 6,567; 1,499 died therein, and 364 died elsewhere; the average age at death being 68.51 years, as against 67.38 for the previous twelve months. The death rate per 1,000 of the average present and absent was 61.18, as against 58.53 for the previous year.

There are 20,297 members buried in the Home cemeteries, while the average number of members present at the Home is 20,547.

RECREATIONS, ETC.

The libraries of all the Branches contain an aggregate of 70,477 volumes; 277 newspapers and 233 periodicals are subscribed for, and 468 newspapers and 66 periodicals are furnished free. The total number of books circulated or read during the year was 243,751.

There are a total of 179 men in the various Branch bands, which cost altogether for the year \$79,495.98; and the entertainments given in the Branch theaters cost, in the aggregate, \$30,197. Members of the Home are admitted free to these entertainments at all the Branches.

PENSIONERS.

At the close of the fiscal year there was an aggregate of 25,168 pensioners on the rolls of all the Branches, drawing pensions of from \$6 to \$72 a month, only two of whom were drawing the higher sum. During the year the pensions paid aggregated \$3,166,734.20. Eleven members had balances of more than \$1,000 each to their credit.

GENERAL FUND.

For the fiscal year ending June 30, 1903, the receipts under the general fund aggregated \$3,137,919.14, and the expenditures \$2,924,360.76. Improvements (not repairs) aggregated \$280,252.71, and repairs (not constructions), \$252,880.59. The average daily number of employees under this fund is 4,362, of whom only 10 per cent are civilians.

PER CAPITA COST.

The per capita cost of maintenance (exclusive of construction), based upon the actual cost to the Government, when this Department in 1894 commenced the examination of the accounts and vouchers, was \$147.05. This was gradually reduced to \$118.17 in 1898, when, under the law, the accounts and vouchers were sent direct to the Auditor without passing through this office. Since that period a gradual increase has been noted, until the reports of the branches for the past fiscal year show the average per capita to be \$141.70, an increase of nearly 20 per cent. This can, in part, be accounted for by the increased cost of living during the past three years.

POST FUND.

During the year the aggregate receipts of the post fund were \$563,724.32, while the expenditures were \$267,017.07. The total net gains of this fund, as reported by the Branches, amounted to \$58,183.18. These gains ranged from \$186.41 at the Southern Branch to \$30,061.09 at the Central Branch. At the Northwestern Branch there was a loss of \$725.27, due to the expenditure of post-fund receipts for general-fund purposes.

BARRACKS.

There is a total of 118 barracks at all the Branches, and their original capacities were exceeded only at the Western and the Pacific Branches. This is quite an improvement over the preceding year,

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when all the Branches, except the new one at Danville, were overcrowded. At the time of inspection the Branches had vacant beds in barracks, ranging from 1 at the Eastern to 272 at Danville, and aggregating 992; but at that time a total of 7,354 members were absent.

DISBURSEMENTS.

The records, disbursements, and accounts of the Home were carefully examined, including the general, pension, post, and special funds and transfers between the different officers. This involved an aggregate of \$14,122,264.32, being an increase of \$1,229,952.52 over the preceding year.

The following is a summary of these inspections:

Balance on hand last inspection		\$1, 254, 774. 44
By Treasury drafts	\$5, 418, 480. 78	
By transfers from officers	6, 763, 795. 78	
From sales	652, 591. 64	
From collections	31, 568. 43	
From member's deposit	1, 053. 25	
		12, 867, 489. 88
		14, 122, 264. 32
Expended per vouchers	9, 409, 424. 88	
Transfers to officers	3, 477, 845. 76	
To credit Treasurer United States	221, 028. 37	
		13, 108, 299. 01
Balance on hand		1, 013, 965. 31

This balance was all accounted for and found to be on deposit with the assistant treasurer of the United States, New York City, N. Y., and in designated United States depositories, except the sum of \$5,378.01 cash on hand.

In the accounts of the general treasurer credit was claimed for \$54,880.58 for which there were no vouchers present. It was stated as the custom of the office to send the checks out before receipted vouchers were in hand, and that the absence of vouchers for the above amount was due to this practice—a practice that leaves the inspector without satisfactory evidence as to the disbursement and the disbursing officer in the hands of his payee.

The transactions in the special funds in the custody of the president of the Board of Managers for the period from October 18, 1902, to November 3, 1903, were as follows:

Designation.	Ward fund.	Butler settlement.	Western Branch improvement fund.	Carnegie Library fund.	Total.
Balance due last inspection	\$26, 184. 57	\$54. 88	\$4, 786. 84		\$31, 026. 29
By transfers from officers			11. 25		11. 25
By interest on bonds	530. 00				530. 00
By interest on deposits	354. 71				354. 71
By donation				\$6, 000. 00	6, 000. 00
Sale of coal-mining rights			2, 393. 42		2, 393. 42
Total to be accounted for	27, 069. 28	54. 88	7, 191. 51	6, 000. 00	40, 315. 67
Expended per vouchers	576. 97			2, 244. 45	2, 821. 42
Transferred to officers			1, 460. 00		1, 460. 00
Total accounted for	576. 97		1, 460. 00	2, 244. 45	4, 281. 42
Balance	26, 492. 31	54. 88	5, 731. 51	3, 755. 55	36, 034. 25
Total	27, 069. 28	54. 88	7, 191. 51	6, 000. 00	40, 315. 67

This balance consisted of \$17,000 in bonds held in safe-deposit box, \$18,961.73 in funds on deposit with the Colonial Trust Company of New York, and the sum of \$72.52 cash on hand.

FARM, ETC.

An aggregate of 1,441 acres is cultivated for farming purposes and 98 acres as gardens for vegetables. So far as reported the value of the farm products produced during the year aggregated \$59,051.54, while the aggregate cost of maintaining the farms, *lawns, flower gardens, transportation, and teams* was \$92,408.33.

At the four Branches that have dairies 178 cows are kept, which produced during the year 135,868 gallons of milk at an average cost of about 9.5 cents a gallon, while the average price paid at the other four Branches was about 18 cents per gallon.

CONCLUSION.

During the inspection I was everywhere met with the utmost courtesy by the officers, both Branch and general, who likewise extended to me every facility for making a thorough inspection, all of which I desire to acknowledge in concluding this report. That the Home should everywhere be found in such generally excellent condition is due to the zeal, earnestness, and efficiency of its officers.

Respectfully submitted.

G. H. BURTON,
Inspector-General.

The SECRETARY OF WAR.

APPENDIX.

NO 1.—REPORT OF AN INSPECTION OF THE WESTERN BRANCH, MADE JULY 13 TO 17, 1903.

Col. Sidney G. Cooke, Herington, Kans., whose term expires in 1906, is the local manager of this Branch, of which the post-office address is National Military Home, Leavenworth County, Kans.

So far as observation could detect, the officers are efficient and attentive to their duties, and the members of the Home seem to be treated with considerate attention. Col. J. G. Rowland, the governor of the Home, has suffered from a severe attack of sickness during the last five or six months, but seemed to be improving at the time of the inspection; but it appears the improvement was only temporary, as he died August 5, 1903. Maj. William W. Martin, the treasurer, is zealous and efficient in the performance of duty. Captain Waterhouse, the Home inspector, is also an efficient officer.

Every room and closet in each public building at the Home was visited and minutely observed. The general condition of the buildings is good, and they were in good repair, except some few outhouses around the shops. Order and neatness in the dormitories was from fair to good. The basements of 13 barracks, used as dormitories, did not compare favorably with the first, second, and third stories in neatness and general appearance. G Company barrack was the best in order and general repair; the others need whitewashing and pipes repainted wherever they exist. The walls of the first and second floor dormitories in a number of the barracks need washing with soap. The L barrack basement was full of sewer gas at the time of the inspection.

The reservation consists of 640 acres of land, much of which is adorned with beautiful forest trees of original growth. The grounds of the Home are traversed thoroughly by well-prepared roads and sidewalks. The flowers around the barracks and driveways are profuse, and effective in appearance. There are two handsome band stands, centrally located, where the band plays every evening in the week but one. A beautiful artificial lake south of the hospital affords opportunity to the members who desire to enjoy rowing and fishing.

There is every facility for communication between the Home and Kansas City and Leavenworth by steam and electric railroads.

There are 14 barracks, all of brick, with metal roofs, occupied by an average of 170 men each, though originally intended for only 124. The age of the members averages about 64 years, and the great majority are feeble. Those living in the attic have two flights of steep stairs to climb several

times a day, which becomes a great hardship and burden to men of their age and condition. I strongly urge and recommend to the Board of Managers that elevators be put in all the barracks and in the hospital. No members were sleeping on floors. The average dormitory air space per man was 627 cubic feet. The barrack bath tubs were not sufficient in number and contract had been made for 13 additional tubs. The number of urinals (six per barrack) appeared to be sufficient, but several of the water-closets in the various barracks were not free from offensive odor; and wherever this condition existed the attention of the officer responsible was called to it.

During the fiscal year 1903 no new buildings were completed, but the construction of a combination barrack was begun. Minor improvements to the amount of \$16,501.91 and repairs to the amount of \$30,088.80 were made during the year.

The total officers and members present and absent on June 30, 1903, was 4,082, of whom 2,599 were present and 1,483 were absent. This was a net gain of 232 over the preceding year. The gain and loss may be indicated as follows:

Gain:	
By appointment.....	1
By first admission.....	787
By readmission.....	290
By transfer from other Homes.....	126
	<hr/> 1,204
Loss:	
By transfer to other Homes.....	86
By discharge.....	395
By honorable discharge.....	4
By dropped from rolls.....	191
By death.....	278
By transfer to Government Insane Asylum.....	18
	<hr/> 972
Net gain.....	<hr/> 232

The average number of officers and members present and absent during the year was 3,970, an increase of 172 over the preceding year. The highest number present during the year was 2,958, on February 22, 1903; the lowest was 2,477, on July 1, 1902. The total number cared for during the year was 5,054, an increase of 250 over the previous year. An average of 16 were temporarily cared for.

A census taken on July 14 showed 2,614 officers and men present in camp and 1,495 absent; total, 4,109. At that date there were only 107 vacant beds in barracks and 28 in the hospital. Should more than one-tenth return a congested condition would apparently arise. There was a net gain of 20 members since June 30, 1903. No members were in confinement at the time of the inspection.

The principal offenses committed were absence without leave, drunkenness, drunk and having whisky, disorderly conduct, and disobedience of orders. The number of members offending was 387; the number of arrests 530; and those offending constituted 14.4 per cent of the average present.

The clothing provided for the members is the same for summer as for winter, and is entirely too hot for any human being to wear in a climate such as obtains during the summer along the Missouri River in this latitude. A num-

ber of the undershirts observed were about one-sixth of an inch thick, and the socks are the heaviest woolen. It was stated that fully one-half of the men will not use the woolen socks in summer and about one-fourth will not wear them at all. The outer garments are alike for summer and winter wear. It would be more economical, as well as humane, to dress these old men at the Kansas Home in light cotton and drilling from May to October.

The clothing on hand June 30, 1903, was valued at \$83,116.98, of which \$70,000 worth had been issued to members, and \$8,000 worth was awaiting condemnation. During the fiscal year clothing costing \$29,757.40 was condemned.

Bids are invited for the purchase of rags made from dress coats, vests, blouses, and trousers, which are prepared as follows: All buttons are first removed from the garments, then the seams are ripped, and after being taken apart the part injured by sewing is carefully trimmed off. The clothing is then cut into strips of from 4 to 6 inches wide, according as the garment will cut to advantage. This clothing is baled separately, as shown by samples and description, in bales 1 to 18, inclusive. The trimmings are baled separately. All other articles are treated in like manner excepting socks, which, of course, are seamless, and hats, which are baled intact. All the clothing is thoroughly washed in the laundry before being cut. Under the rules of this branch the clothing is not worn close. Articles are condemned as soon as any hole is worn in them, however small it might be, hence most of the clothing is really good. No bid will be considered unless the price is named opposite each and every article, and no lump bid for the whole lot can be considered. Freight rates from here to any point are the same as from Kansas City. The cost of drayage and loading in the car will approximate 4 cents per hundredweight. Bidders are invited to select a representative to be present at receiving goods, to verify the weights and attend to shipping. Should bidders desire to personally inspect the property before buying, they are allowed to do so.

The character of the food supplied and the arrangements for serving it are commendable. A sample bill of fare for one week was submitted, showing a satisfactory variety of good dishes. The average number of employees in the kitchen is 17; in the dining hall, 89. Sixty thousand pounds of swill and garbage are produced per month, which last year sold for \$606.

The average daily cost of a ration (including vegetables, fruit, and milk produced on the Home ground) was reported as 14.73 cents, and of the hospital ration (including extra diet) 21.13 cents.

The hospital, in charge of Major Hull, was thoroughly neat and orderly in every respect. The wards were clean, tasteful, and inviting, and the sick have every care that can be desired. The ample food is well served. The hospital has a capacity for 300 patients. No special quarters are provided for convalescents. There is 1 bath tub for every 25 patients. The daily average of sick was reported as 308.42—264.41 in hospital and 44.01 in barracks or at sick call. The principal diseases were pulmonary tuberculosis, influenza, rheumatism, chronic diarrhea, enteritis, mitral insufficiency, hemiplegia, and erysipelas. The number of patients admitted to hospital during the year was 767. The deaths

numbered 218, of whom 60 died elsewhere than in the hospital. The average age at death was 68.10 years, while the death rate was 70 per 1,000 of the average present and absent. Eighteen members were sent to the Government Insane Asylum during the year. The average number of hospital employees is 116 members, 22 civilians, and 11 female nurses, and their cost for the year was \$21,246.29. The number of drugs, preparations, etc., used during the year was 397, costing \$1,495.29, and for appliances \$1,763.94.

The number of members buried in the Home cemetery is 2,339, of which 222 were interred during the year. The capacity of the cemetery is said to be ample.

There are 120 acres under cultivation this year—80 Farm. as a farm and 40 as a vegetable garden. The 46 cows yielded during the year 31,027 gallons of milk, at a cost of about 8 cents per gallon, while the price per gallon by the quantity in the nearest town was 14.25 cents. The public animals were in fine condition, due to the good care taken of them. The farm stock on hand on June 30, 1903, was valued at \$5,080. The average number of farm employees is 50—47 members and 3 civilians.

Value of farm and garden products—	
Turned into commissary	\$9,591.52
Fed to stock	430.00
Sold	12.00
Total	10,033.52
Cost of maintaining farm proper	6,984.62
Cost of maintaining lawn and flower garden	2,289.40
Cost of maintaining transportation and teams	4,419.14
Total	13,693.16

The amount appropriated for farm was \$15,000.

Fire plugs at convenient points, a supply of good Fire protection. hose in each barrack, the hospital, etc., hand fire extinguishers, fire buckets always filled, a hook and ladder truck, and 2 chemical engines seemed to provide adequate protection against fire. The apparatus is said to be frequently tested by two men employed for that purpose. The fire company consists of 180 members and 30 civilians. No fires occurred during the year.

Water is supplied from the Leavenworth city water-works. The sewerage and drainage system consists of covered sewer pipe sunk to a proper depth, emptying into the Missouri River. The steam plant, consisting of a main Engineer department. engine, 175-horsepower, 2 200-horsepower, and 4 300-horsepower boilers is used for heating, cooking, and pumping water in case of the failure of the waterworks to supply sufficient pressure. It cost \$24,234, and was maintained during the fiscal year at a cost of \$42,363. The lighting plant consists of 2 55-kilowatt direct-current machines; 1 T. & H. arc-light machines, class K, 30 lights; and 1 Armington & Simms engine, which cost for maintenance last year \$3,697. There are 30 arc and 1,823 incandescent lights. No gas. The cold-storage and ice plant consists of 1 50-horsepower engine with compressor and steam pump; and during the fiscal year it made 565 tons of ice, at a cost of \$1 per ton.

During the year \$3,563.90 was expended at the Home for labor and materials in the laundry, in which 17 men are employed.

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There is at this home a beautiful church structure, with two floors, one occupied by the Catholics and the other by the Protestants. The duties assigned to the chaplains are Sunday services, funerals, and visits.

There is a beautiful little theater where plays are billed during the winter for the benefit of the members, who are admitted free; others are charged 15 and 50 cents. The expenses for performances were \$3,963, while the receipts amounted to \$291.80.

The library contains 8,153 volumes—479 having been added and 1,963 condemned during the year. Forty-three newspapers and periodicals are subscribed for and 92 are furnished free. The number of books circulated or read during the year was said to be 18,787.

The band consists of 22 men, of whom 21 are civilians; and its cost for the fiscal year, including subsistence and other allowances of civilians, was reported as \$10,090.39.

The accounts and disbursements pertaining to the several funds were examined from August 15, 1902, the date of the last inspection, to July 13, 1903; and the transactions may be summarized as follows:

Designation.	General fund.	Pension fund.	Post fund.	Total.
Balance due last inspection.....	\$62,572.14	\$2,699.27	\$8,008.16	\$73,279.57
By transfers from officers.....	332,882.50	442,570.29		775,452.79
From sales.....	6,333.95		64,799.35	71,133.30
From collections.....	2,030.82		1,480.55	3,511.37
Currency from checks.....	101,097.59	295,843.15	8,601.28	405,542.02
Currency redeposited.....	8,364.77	80.00	65,870.05	74,314.82
Total to be accounted for.....	513,281.77	741,192.71	148,759.39	1,403,233.87
Expended.....	346,689.48	437,699.89	61,396.99	845,786.36
Transferred to officers.....	268.27		1,800.00	2,068.27
Checks for currency.....	101,097.59	295,843.15	8,601.28	405,542.02
Currency redeposited.....	8,364.77	80.00	65,870.05	74,314.82
Total accounted for.....	456,420.11	733,623.04	137,668.32	1,327,711.47
Balance due.....	56,861.66	7,569.67	11,091.07	75,522.40
Total.....	513,281.77	741,192.71	148,759.39	1,403,233.87

In addition to the above, \$1,460 was received by transfer from the president of the Board of Managers, of the Western improvement fund, of which \$1,448.75 was expended and \$11.25 was returned unused.

All the above balances were on deposit with the First National Bank of Leavenworth, Kans., except \$509.80 cash on hand under the post fund.

The receipts and expenditures for the fiscal year ending June 30, 1903, amounted to \$417,539.05 and \$357,642.75, respectively. Of the total receipts all was by transfer except \$8,901.81, from sales and other sources; \$247,642.51 was reported as expended by check, and \$110,000.24 in currency. On posthumous accounts \$2,181.39 was received, \$2,018.80 disbursed, leaving a balance of \$162.59.

During the year the daily average number of employees under the general fund was 560, as against 516 for the preceding year, and the total amount paid them was \$110,518.51, as against \$103,158.58 for the previous year. An average of 21 per day worked without pay, policing the grounds, unloading supplies, etc.

Per capita cost. The average cost of maintenance per capita for the fiscal year 1903 was reported as \$136.65, as against \$140.95 for the preceding year, a decrease of \$4.30.

Pension fund. There were 3,697 pensioners on the rolls at the close of the fiscal year, whose pensions ranged from \$6 to \$30 per month, 8 members receiving the last-named sum. During the year \$445,292.77 was paid to members of this Branch on pension account.

Post fund. The receipts and expenditures under the post fund for the fiscal year 1903 were reported as \$72,141.41 received (of which \$70,559.85 was from sales), and \$68,672.24 expended (of which \$44,096.73 was for stock). The average daily number of employees under this fund is 51, and for the past fiscal year they cost \$9,709.19. Net gain for the year, \$1,727.70.

There is a small hotel at the Home for the convenience of visitors. It is at present being run in a very efficient manner.

While the cashier of the beer hall is charged with the face value of the checks issued to him and credited with the cash returned, there does not seem to be any check on the amount of beer sold. The charge of \$1,800.31 against the post fund for coal bought, and properly payable from the general fund, does not seem to be a proper charge against this fund. Under the prevailing conditions existing last year, the shortage in the amount available for this purpose could hardly be classed as an emergency that could not have been met by timely administrative action. The post fund should be held inviolate for its legitimate purposes, and not be used as a fund to meet deficiencies elsewhere.

NO. 2.—REPORT OF AN INSPECTION OF THE PACIFIC BRANCH, MADE JULY 26 TO 31, 1903.

Maj. William G. Bonsall, Los Angeles, Cal., whose term expires in 1904, is the local manager of this Branch, of which the post-office address is: "Soldiers' Home, Los Angeles County, Cal."

Officers. Gen. O. H. LaGrange, the governor of this Home, is possessed of fine administrative ability, and has a happy way of handling old soldiers. There had been no change in the officers of this Branch since the last report, all of whom seem to be capable, zealous, energetic men, and alive to the interests devolving upon them.

General conditions. In a thorough inspection of the Home, the barracks, dormitories, dining room, kitchen, pantries, store-houses, shops, laundry, bakery, power plant, and stables, and all closets connected with the living and messing departments, were found in very fine condition; in fact, so satisfactory were the conditions respecting order and cleanliness that only commendations were permissible. Such small irregularities as were noticed during the inspection of this institution were called to the attention of the military governor, who gave assurance that they would be corrected. However, such defects were few in number and inconsequential in character.

Reservation. There had been no change during the year in the reservation, which consists of 737 acres of land, generally well laid out in convenient plots for cultivation or for ornamentation. The grounds, roads, walks, etc., were all in the

same perfect state of repair; and the flowers, which were numerous, were very attractive.

At this Home there are 9 frame barracks, and at the time of inspection there was a new one building under contract. It was claimed that the original capacity of these barracks has been expanded to the extent of 71 per cent. None of the men were sleeping on floors. The average dormitory air space per man is 882.8 cubic feet. The barrack bath tubs, of which there are 31, are all conveniently located, and average 50 men to each tub. There are 45 urinals, conveniently placed in the various barracks, to each of which there was an average of 34 men.

The storehouses are in seven basements of buildings, and were all in good condition. The quartermaster storehouse was a model of classification of stores, as well as of neatness, and the same can be said of the commissary department. The shops were all orderly, and in a good state of preservation.

During the fiscal year 1903 no new buildings were constructed, though the construction of a new barrack was begun, as already stated. Minor improvements to the amount of \$33,044.57 and repairs to the amount of \$28,390.25 were made during the year.

The total officers and members present and absent on June 30, 1903, was 2,856, of whom 1,837 were present and 1,019 were absent. This was a net gain of 185 over the preceding year. The gain and loss may be more conveniently referred to as follows:

Gain:	
By first admission	441
By readmission	141
By transfer from other Homes	13
	— 595
Loss:	
By transfer to other Homes	28
By discharge	115
By dishonorable discharge	3
By dropped from rolls	33
By death	226
By transfer to insane asylums	5
	— 410
Net gain	185

The average number of officers and members present and absent during the year was 2,788 (an increase of 149 over the previous year), of whom 1,899 was the average present and 889 the average absent. The highest number present during the year was 2,014, on February 10, 1903, and the lowest was 1,690, on July 12, 1903. An average of 35 were temporarily cared for. The total number cared for during the year was 3,266, an increase of 269 over the preceding year.

The inmates of this Home looked generally younger than those of the Western Branch, near Leavenworth, Kans.; their average age was reported as 61.22 years.

A census of the camp on July 26, 1903, showed 1,922 officers and members present in camp, and 994 absent; total, 2,916. At this date there were 168 vacant beds in barracks and none in the hospital. There had been a net gain of 38 members since June 30, 1903. No members were in confinement.

Discipline. The principal offenses committed during the year were reported as drunkenness, absence without leave, drunk and disorderly on the Home grounds, and fighting in quarters. The total number of members reported as offending was 195, and the total number of arrests the same. Those offending constituted 10.2 per cent of the average present. The discipline is fairly good.

Clothing. The members were well dressed. The clothing is well adapted to the climate for all seasons, as it is ordinarily cool here in close proximity to the seaboard all along the southern California coast. Therefore, the observations made in regard to the summer clothing at Leavenworth would not apply to southern California. The cleaning of the clothes seemed to be quite economical and to add about one-third to their life.

It was reported that there was clothing on hand June 30, 1903, to the value of \$28,968.95, of which \$13,377.75 worth had been issued to members, \$1,884.25 worth was awaiting condemnation, and \$15,145.54 worth was condemned during the year.

Food. At this Home the arrangements for cooking and serving the food, like everything else, were highly commendable. The food furnished seemed satisfactory alike in quantity, quality, and variety. The average number of persons employed in the kitchen and dining hall, respectively, was reported as 29 and 68. It was stated that about 54,000 pounds of swill and garbage are produced per month, and consumed by the hogs on the farm.

The average daily cost of a ration (including vegetables and fruit raised on the Home grounds), was reported as 18.63 cents, and of the hospital ration (including extra diet) 19.42 cents.

There seemed to be no check on the bake shop as to the amount of fabrications required from amount of stock issued to it.

There seems to be no relation between the number of pounds of bread issued and the number of rations, as during the week ending July 28 the fabrications noted were from 548 pounds to 1,387 rations to 1,148 pounds to 1,394 rations.

Hospital. The hospital department of the Home was thoroughly good, and in excellent order and repair. The female nurses have quarters at one end of the building, where they are very comfortable, and satisfied to remain. I believe it is contemplated to put up a separate building for them, the necessity for which, however, is not apparent, as they are now in close proximity to their work—which is constant, day and night—and are perfectly satisfied. It would seem to be the part of wisdom to let well enough alone. The reasons given for this building did not seem to me to be sufficient in weight to warrant the Government in going to the expense of its construction.

The hospital has a capacity for 281 patients. There are no extra quarters for convalescents. There is one bath tub for every 24 patients. The daily average of sick was reported as 276—260 in hospital and 16 in barracks. The principal diseases were stated to be bronchitis, chronic constipation, chronic cystitis, dementia, gastritis, hemiplegia, hemorrhoids, pulmonary tuberculosis, rheumatism, and valvular disease of the heart. The total number of patients admitted to the hospital during the year was 709, of whom 187 died in the hos-

pital and 39 died elsewhere. The average age at death was 66 years. The death rate per 1,000 of the average present and absent was 69.16. Five members were sent to insane asylums during the year. The average number of hospital employees was reported as 99 members, 22 civilians, and 14 female nurses, at a yearly cost of \$20,647.35. The number of drugs, preparations, etc., used in the dispensary was 250; the amount expended therefor was \$3,927.39, and for appliances, \$3,301.90.

The number of members buried in the Home cemetery during the year was 188. The total number buried there is 1,224. The total capacity of the cemetery is reported as 2,017. As the location of the grave, date of death, etc., are noted in the Historical Record, why duplicate the record by keeping a burial record? Both are not necessary.

The farm, its orchards and growing crops, were in an excellent state of cultivation. There are 285 acres under cultivation—265 as a farm and 20 as a garden. No cows are kept. The price of milk per gallon, by the quantity, in the nearest town is 15 cents. The value of farm stock on hand on June 30, 1903, was reported as \$9,250. The average number of farm employees is 56—54 members and 2 civilians.

Value of farm and garden products—

Turned into commissary	\$5,399.34
Fed to stock	3,094.92
Sold	3,240.42
Total	11,734.68
Cost of maintaining farm proper	7,239.96
Cost of maintaining lawn and flower garden	3,057.65
Cost of maintaining transportation and teams	2,615.46
Total	12,913.07

The appropriation for farm for the year was \$10,000.

The protection against fire consists of 32 hydrants, 4,250 feet of hose, 2 chemical engines, 151 3-gallon fire extinguishers, 1 hose cart, 1 extension ladder, 13 assorted ladders, 475 buckets, 75 axes, and 6 hooks, with extension ladder truck. This apparatus is tested every two weeks. The fire organization consists of a battalion of 250 men—10 to each barrack, 20 to the hospital, and the remainder to the other buildings and to the trucks, etc. There were no fires during the year.

Water is supplied by the West Los Angeles Water Company, by gravity; and 500,000 gallons per day are furnished. The drainage and sewerage system, which is in good condition, consists of cement gutters for surface drainage and vitrified drainpipe for sewage. The sewage passes through septic tanks and is used in broad irrigation of barley and alfalfa fields. The steam plant consists of 5 tubular boilers, aggregating 400 horsepower. Three new boilers are to be installed, which will give the plant a total of 550 horsepower. It is used for heating, cooking, furnishing power, etc., and cost \$39,725, and was maintained during the fiscal year at a cost of \$14,419.30. The lighting plant consists of a 25-light (arc) transformer, and a system of poles, wires, lamps, etc., and cost for the year's maintenance \$7,519.45. There are 25 arc and 2,750 incandescent lights. No gas. The cold storage and

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ice plant consists of a 5-ton compressor, an 8-ton compressor, cooling rooms, piping, boxing, etc., and during the fiscal year it made 180 tons of ice, at a cost of \$2.75 per ton. The cost at the Western Branch was \$1 per ton, and at the Central 50 cents per ton.

During the year \$4,217.15 was expended for labor and supplies in the laundry, in which 13 men are employed.

The facilities for religious services consist of two chapels—Catholic and Protestant. The chaplains have charge of the spiritual welfare of the members. They make frequent visits to the hospital, answer promptly all requests for attendance; and, without being subject to definite rules and regulations, have an active interest in all that relates to good discipline and the moral and spiritual well-being of the members. They also officiate at funerals.

During the year the expense for performances at the theater amounted to \$1,682. There is no charge for admission to members, but others are charged 10 cents; the receipts from this source for the year being \$84.55.

The library contains 4,465 volumes, of which 832 had been added during the year; 384 volumes were condemned and burned during the same period. Six newspapers are subscribed for and 44 are furnished free. It was stated that 32,400 books had been read or circulated during the year.

The band plays habitually from the balcony in one of the barracks. They are very much in need of a band stand at this institution—one in some central location, where the music might be heard by those in the hospital, would give opportunity for its more general enjoyment. The band consists of 2 members and 12 civilians, and its total cost for the past fiscal year, including subsistence and other allowances of civilians, was \$5,437.59.

The accounts and disbursements pertaining to the several funds were examined from August 6, 1902 (the date of the last inspection), to July 25, 1903, and the transactions may be summarized as follows:

Designation.	General fund.	Pension fund.	Post fund.	Total.
Balance due last inspection	\$11,294.13	\$5,732.47	\$12,102.10	\$29,128.70
By transfers from officers	274,680.00	313,818.41	172.00	588,670.41
From sales	10,324.45	.....	42,786.85	53,111.30
From collections	3,217.19	.....	9,929.15	13,146.34
Currency from checks	81,389.61	198,240.45	4,741.74	284,371.80
Currency redeposited	12,347.83	48.00	51,965.40	64,361.23
Total to be accounted for.....	398,253.21	517,839.33	121,717.24	1,032,809.78
Expended per vouchers	289,623.52	310,009.89	40,020.10	639,653.51
Transferred to officers	3,833.54	666.37	.....	4,499.91
Checks for currency	81,389.61	198,240.45	4,741.74	284,371.80
Currency redeposited	12,347.83	48.00	51,965.40	64,361.23
Total accounted for.....	387,194.50	508,954.71	96,747.24	992,896.45
Balance due	6,058.71	8,884.62	24,970.00	39,913.33
Total.....	393,253.21	517,839.33	121,717.24	1,032,809.78

The above amounts were on deposit with the Los Angeles National Bank, except \$770.60 cash on hand under the post fund, and \$1,198.48 under the general fund; total, \$1,969.08.

The receipts and expenditures under the general fund amounted to \$313,418.74 and \$301,352.42, respectively. Of the total receipts, all was by transfer except \$11,218.74 from sales and other sources. There was expended by check \$212,926.60, and in currency \$88,425.82. On posthumous accounts \$2,711.31 was received and \$1,833.22 disbursed, leaving a balance of \$878.09.

During the year the daily average number of employees under the general fund was 453, as against 456 for the previous year; and the amount paid them was \$88,494.96, as against \$80,305.27 for the previous year. A daily average of 10 worked without pay, and were employed in policing the grounds.

The average per capita cost of maintenance at this Branch for the fiscal year 1903 was reported as \$142.58, as against \$136.65 for the preceding year, an increase of \$5.88.

At the close of the fiscal year 1903 there were 2,554 pensioners on the rolls at this Branch, and their pensions ranged in amount from \$6 to \$30 per month, five members receiving the last-named sum. During the year the pensions paid to members amounted to \$309,554.61.

The canteen was in excellent order. The receipts and expenditures under the post fund for the fiscal year 1903 were reported, respectively, as \$53,862.15 (of which \$43,542.70 was from sales) and \$42,272.33 (of which \$24,601.17 was for stock). The average received for a barrel of beer for the year was \$16.18. The average daily number of employees under this fund is 25, and for the fiscal year the amount paid them was \$5,157.49.

Altogether, the Pacific Branch of the National Home is a very delightful institution and thoroughly appreciated by the members.

No. 3.—REPORT OF AN INSPECTION OF THE NORTHWESTERN BRANCH, MADE AUGUST 20 TO 21, 1903.

Col. John L. Mitchell, Milwaukee, Wis., whose term expires in 1904, is the local manager of this Branch, the post-office address of which is, "National Home, Milwaukee County, Wis." Colonel Mitchell is also second vice-president of the Board of Managers.

Since the previous inspection several changes in the officers of the Branch have occurred, to wit: Maj. Oscar Chrysler succeeded Maj. Almon Clarke as surgeon; Capt. Charles O. Collins was appointed commissary of subsistence, and Rev. E. P. Huston succeeded Rev. A. Hayden as Catholic chaplain.

All buildings and all rooms, closets, drawers, and vacant places in each building were thoroughly inspected. The main barrack, which accommodates seven to eight hundred men, was not in as good order as a majority of the smaller ones, especially barracks L and M, which were the best inspected. And, by the way, these two barracks have their own messes and are very much soug after by the members. The windows in some of the barracks were not clean, and the bedspreads in the large barrack and in some of the smaller ones were not fresh.

The men are well cared for.

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Such omissions, defects, neglects, and irregularities as were observed were called to the attention of the governor during the inspection, with the promise that they should be remedied.

The grounds in and around the Home are beautifully kept, and the roads were in thorough repair.

Reservation. There had been no change during the year in the reservation, which consists of about 382 acres, in excellent preservation, and generally quite attractive in appearance. Communication is had with Milwaukee, only 4 miles distant, by two electric railways, as well as by good roads for driving, etc.

Buildings. Of the 12 barracks under consideration, it was stated that their original capacity had not been exceeded during the past year. None of the members were sleeping on floors at the time of the inspection. The average dormitory air-space per man is 639 cubic feet. The bath tubs, 39 in number, average one tub to 41 men. There is an average of 5 urinals to the barrack, conveniently located and sufficient.

The storehouses, five in number, are in basements, and were all in good condition.

Population. The total number of officers and members present and absent on June 30, 1903, was 2,639, of whom 2,071 were present, and 568 were absent. This was a net loss of 8 from the preceding year. The gain and loss may be indicated as follows:

Gain:	
By first admission.....	290
By readmission.....	211
By transfer to other Homes.....	119
	<hr/> 620
Loss:	
By transfer to other Homes.....	82
By discharge.....	273
By dishonorable discharge.....	7
By dropped from rolls.....	76
By death.....	190
	<hr/> 628
Net loss.....	<hr/> 8

The average number of officers and members present and absent during the year was 2,686 (an increase of 70 over the preceding year) of whom 2,175 was the average present, and 511 the average absent. The greatest number present on any one day during the year was 2,310 on January 20, 1903; and the lowest number present on any one day was 1,995, on May 12, 1903. An average of 19 were temporarily cared for; the total number cared for during the year was 3,267—a decrease of 60 from the previous year.

The average age of the members during the year was 69.27 years—by far the greatest average age reported at any of the Branches.

A census of the camp was made on August 1, 1903, and showed 2,150 officers and members present in camp, and 564 members absent, a total of 2,714. At this date there were 46 beds vacant in barracks, and 43 in the hospital, and 6 members were in confinement. There had been a net gain of 50 members since June 30, 1903.

The principal offenses committed during the year were reported as drunkenness, for which there were 357 trials; and absence without leave, for which there were 380 trials. The total number of members reported as offending

Discipline.

was 548, and the total number of arrests as 953; those offending constituted 25.19+ per cent of the average present. During the year \$163.25 was received as dump fines, and credited to the post fund.

Clothing. There was clothing on hand for issue on June 30, 1903, to the value of \$5,271.55; and during the year \$27,377.35 worth had been issued, and \$23,672.34 worth had been inspected and condemned.

Food. The messing is good in the main dining hall, as well as in the smaller messes. The food is of excellent quality and was well served. The average number of persons employed in the kitchen and dining hall, respectively, is 18 and 74; and the dining hall will accommodate 960 persons at one sitting. It was stated that about 37,500 pounds of swill and garbage is produced per month, part of which is sold, and part used on the grounds; the receipts for that sold during the year were \$60.

The average daily cost of a ration (including milk, fruit, and vegetables produced on the Home grounds) is 13.34 cents; and the hospital ration (including extra diet) 18.57 cents.

Hospital. The hospital was not up to the high standard with respect to good order and cleanliness as the other institutions of like nature in the other Branches inspected. Parts of it, and especially where the extremely old men were located, were more or less untidy, dirty, and disorderly. At the time of the inspection it was receiving an addition to the kitchen. This repair militated somewhat against its appearance.

The hospital has a capacity for 292 patients. There is a bath tub in each ward, and also a bath tub in the building in which hot air and electrical baths can be given. The daily average of sick during the year was 309—252 in hospital and 57 in barracks. The principal diseases that prevailed during the past fiscal year were arterio-sclerosis, bronchitis, cardiac degeneration, cystitis, enteric catarrh, and rheumatism. The total number of patients admitted to the institution during the year was 971, of whom 178 died therein, while 12 died elsewhere. One hundred and seventy-three deaths were from natural causes and 5 from other causes. The average age at death was 74.13 years, which is much higher than was reported at any other Branch. The death rate per 1,000 of the average present and absent was 58.12. None of the members were sent to insane asylums during the year. The average number of hospital employees was 84 members, 19 civilians, and 10 female nurses, at a cost of \$20,695.64. The amount expended during the fiscal year for drugs was \$6,905.38, and for appliances \$2,392.49.

The number of members buried in the Home cemetery during the year was 140. The total number buried there is 2,801—this being a majority of 115 over the living members both present and absent, 2,686 in number. The total capacity of the cemetery is ample for future needs. Additional ground for burial purposes is platted as needed.

Farm. There are 250 acres of land under cultivation—245 as a farm and 5 as a garden for vegetables. The Home has 48 cows, which yielded during the year 30,939 gallons of milk, at a cost of 12 cents per gallon. The cost of milk per gallon, by the quantity, in the nearest town is 13 cents. The value of the farm stock on hand on June 30, 1903, was \$3,835. The average number of farm employees is 37 members and 2 civilians.

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Value of farm and garden products—	
Turned into commissary.....	\$5,858. 12
Fed to stock	3, 146. 25
Sold.....	645. 28
Total	9, 649. 65
Cost of maintaining farm proper.....	4, 476. 00
Cost of maintaining lawn and flower garden.....	2, 485. 00
Cost of maintaining transportation and teams.....	2, 635. 00
Total	9, 596. 00

The appropriation for farm for the year was \$10,250.

Fire protection. The means and appliances for protection against fire are adequate and satisfactory. The apparatus is tested frequently. There were no fires during the year.

Engineer department. Water is supplied by the Milwaukee city water works and is satisfactory. Drainage and sewerage are provided for by the intercepting system, which was in good condition. The steam plant consists of 9 boilers—4 Babcock & Wilcox and 5 tubular—and is used for furnishing power, heat, and cooking. It cost \$20,408, and was maintained during the year at a cost of \$33,481. The lighting plant consists of 2 engines, 2 dynamos, etc., and cost \$2,557 for maintenance during the year. It supplies 12 arc lights and 1,870 incandescent lights. No gas is used at this Branch. No ice is manufactured, but there is an ice house and cold-storage rooms.

During the year \$2,673.70 was expended for labor and material in the laundry, in which 15 men are employed.

Religious services. The facilities for religious services consist of a chapel, accommodating separately the Catholic and the Protestant worshippers, with a chaplain for each. The duties assigned them are the conducting of religious and funeral services and visiting the sick.

Amusements. During the year the expenses for performances given in the theater amounted to \$1,050. No charge for admission is made to members of the Home, but others are charged 25 cents each, the receipts from which for the year were \$66.10. The theater has a seating capacity of 850.

The library contains 9,838 volumes, of which 197 had been added during the year. Thirteen volumes were condemned and destroyed during the same period. Thirty-eight newspapers and 36 periodicals are subscribed for, and 21 newspapers and 13 periodicals are furnished free; 30,601 books were read or circulated during the year.

The band consists of 14 civilians. The average monthly compensation of the leader is \$100; that of the other members \$24.21. The total cost of maintaining the band for the year, including the subsistence and other allowances, was \$5,610.42.

Disbursements. The accounts and disbursements pertaining to the several funds were examined from August 20, 1902 (the date of the last inspection), to August 20, 1903—an exact year. The transactions may be summarized as follows:

Designation.	General fund.	Pension fund.	Post fund.	Total.
Balance due last inspection.....	\$33,413.76	\$22,967.67	\$5,965.17	\$62,346.60
By transfers from officers.....	335,963.95	299,523.87	.....	635,487.82
From sales.....	5,249.82	.....	37,823.67	43,073.49
From collections.....	1,784.22	.....	.....	1,784.22
Currency from checks.....	86,488.85	205,664.81	11,358.57	303,512.23
Currency redeposited.....	.....	72.00	37,695.52	37,767.52
Total to be accounted for.....	462,900.60	528,228.35	92,842.93	1,083,971.88
Expended per vouchers.....	324,909.60	297,849.74	38,954.18	661,713.52
Transferred to officers.....	8,706.95	.....	.....	8,706.95
Checks for currency.....	86,488.85	205,664.81	11,358.57	303,512.23
Currency redeposited.....	.....	72.00	37,695.52	37,767.52
Total accounted for.....	420,105.40	503,586.55	88,008.27	1,011,700.22
Balance due.....	42,795.20	24,641.80	4,834.66	72,271.66
Total.....	462,900.60	528,228.35	92,842.93	1,083,971.88

The above amounts were on deposit with the First National Bank of Milwaukee, Wis., except \$197.61, cash on hand under the post fund.

The receipts and expenditures for the fiscal year ending June 30, 1903, under the general fund amounted to \$321,988.11 and \$309,453.68, respectively. The sum of \$1,923.11 was received on posthumous accounts, all of which was reported as having been paid out on the same account.

During the year the daily average number of employees under the general fund was 445, as against 488 for the preceding year—a decrease of 43. A daily average of 65 men were reported as having worked without pay.

The average per capita cost was \$142.90, as against \$129.52 for the preceding year—an increase of \$13.38.

This marked increase occurred as follows, under the various subheads of appropriation, to wit: Current expenses, \$3.73; subsistence, 25 cents; clothing, \$1.08; household, \$6.44; repairs, \$1.85; farm, 27 cents. Under hospital the expense per capita was 24 cents less for this year than for the preceding one.

A closer accountability should be required from the bakery for materials issued to it.

At the close of the fiscal year 1903 there were 2,446 pensioners on the rolls, whose pensions ranged from \$6 to \$55 per month, two members receiving the last-named sum. During the fiscal year the pensions paid to members amounted to \$204,883.45. Of the pensioners 286 had funds to their credit in sums of \$1,000 and under.

The receipts from sales under the post fund for the fiscal year amounted to \$35,961.32, and the expenditures for stock amounted to \$17,641.73. The average daily number of employees under this fund was 58—35 members and 23 civilians—their cost for the year being \$11,569.90. A net loss of \$725.27 is reported for the year. Included in the expenditures of this fund was \$2,761.43 for coal, properly chargeable to the general fund under the head of household. As the appropriation for this purpose was \$64,000, of which only \$60,160 was reported as received by the treasurer in cash and \$1,031.78 in supplies, there would seem to be a sufficient sum remaining to the credit of the proper fund from which to pay for this coal.

Complaints. A complaint was made by a member that the chicken and fish furnished for the hospital mess and served to patients were very bad; that the hospital ration generally did not come up to specifications in either weight or quality, etc. The testimony elicited at the investigation made by the governor of the Branch seemed to indicate very clearly, and by practically the unanimous voice of the many witnesses, that there were no good grounds for the complaint.

NO. 4.—REPORT OF AN INSPECTION OF THE EASTERN BRANCH, MADE SEPTEMBER 3 AND 4, 1903.

Gen. John Marshall Brown, Portland, Me., whose term expires in 1908, is the local manager of this Branch, of which the post-office address is "National Home, Togus, Me."

Officers. There had been no change in the officers of this Branch since the preceding inspection. They are: Governor, Col. S. H. Allen; treasurer, Maj. A. L. Smith; quartermaster, Capt. W. H. Anderson; commissary of subsistence, Capt. S. J. Gallagher; surgeon, Maj. W. E. Elwell, and in their management of the Home there is much to commend and very little to criticize.

Buildings, general conditions, etc. There are 13 barracks, 7 of which are brick and 5 frame. There is one extra frame barrack that is used only in summer.

Barrack G (brick), one of the oldest at the Home, was in good condition; barrack F (brick) was not up to the standard of the balance of the companies. In Company D barrack the roof leaks badly, consequently the walls are in poor condition, and all of the equipment of this barrack is rather poor. Barrack A, of the old brick construction, is similar to Barrack D; its equipment is poor. Barrack K, also of the old brick construction, is in the best shape of all. Companies E and H, in the new barracks recently constructed, are the neatest and most orderly of the organizations. This new barrack is built on a very attractive plan. It provides for 1 company upstairs and 1 downstairs. In front of the stairway on the second floor is a large vestibule, circular in form. It is light and airy, and the men spend most of their time there in bad weather. The barrack accommodates 228 men. This is the best arranged barrack I have seen, either in the Homes or in the Army.

The barracks, quarters, and storehouses, with the exceptions noted, were in an excellent state of preservation and repair. There is some construction going on in the shape of a quartermaster's storehouse, and a brick gateway to one of the entrances.

Wherever the want of order or cleanliness was observed in any organization, it was pointed out to the officer in charge, who promised immediate correction.

With the addition of the new barrack building, the barrack capacity seems sufficient for present needs. None of the men were sleeping on floors. The average dormitory air space per man was 526.4 cubic feet—the smallest of any of the branches. There are 36 bath tubs for the use of the members, and the average of men to the tub is about 54. There are 86 urinals, conveniently located, which appear to be sufficient.

During the fiscal year 1903 improvements to the amount of \$27,875.80 were made. There were repairs to the amount of \$25,136.76.

There had been no change during the year in the reservation, which contains 1,884 acres. The grounds in and around the Home were in a fine state of preservation. The flowers were still in bloom at the time of my inspection and they gave a beautiful appearance to the grounds.

Communication is had with the city of Augusta by electric railway and with Gardiner by a narrow-gauge steam railway.

The total number of officers and members present and absent on June 30, 1903, was 2,771, of whom 1,925 were present and 846 were absent. This was a net loss of 22 from the preceding year. The gain and loss may be indicated as follows:

Gain:		
By first admission	231	
By readmission	94	
By transfer from other Homes	11	
	<hr/>	336
Loss:		
By transfer to other Homes	29	
By discharge	97	
By dishonorable discharge	4	
By dropped from rolls	28	
By death	186	
By transfer to insane asylums	14	
	<hr/>	358
Net loss		22

The average number of officers and members present and absent during the year was 2,760 (a decrease of 7 from the preceding year), of whom 2,170 was the average present and 590 the average absent. The highest number present during the year was 2,285, on December 3, 1902; the lowest number was 1,872, on June 26, 1903. There are only 8 colored members at this Home. An average of 2 men were temporarily cared for during the year. The total number cared for was 3,129—a decrease of 4 from the preceding year.

The average age of the members to June 30, 1903, was reported as 63 years.

A census of the camp, taken on September 4, 1903, showed 2,446 officers and members present in camp, and 565 absent; total, 3,011. At that date there were 10 vacant beds in hospital and 1 in barracks, and no members were in confinement. There had been a net gain of 38 members since June 30, 1903.

A review was also had on September 4, at which 1,365 men were in line, all in uniform; present in camp, but not in line, 873; total present, 2,238. There were then 565 men absent, only one of whom was without leave.

The principal offenses committed during the year were said to be drunkenness and absence without leave. The total number of members reported as offending was 345; the total number of arrests, 494. Those offending constituted 15.9 per cent of the average present, only the Pacific, Western, and Marion Branches showing smaller percentages in this respect.

Clothing. There was clothing on hand for issue on June 30, 1903, to the amount of \$5,218.56. There was during the year issued to members clothing valued at \$50,371.40; \$6,015.89 worth was awaiting condemnation, and \$20,588.22 worth was condemned.

Food. A sample bill of fare for the week ending June 30, 1903, was submitted. So far as observed, the fare was in every way satisfactory, and the arrangements for cooking and serving it seemed excellent. The average number of persons employed in the kitchen and dining room, respectively, were 19 and 59. It was reported that 128 barrels of swill and garbage are produced monthly, which are sold on yearly contracts; the receipts from which for the last year were \$355.58.

The average daily cost of a ration (including vegetables, fruit, and milk produced on the Home grounds) was 16.62 cents; of the hospital ration (including extra diet) 16.98 cents. At no other Branch was the cost of these two rations so nearly the same.

Hospital. The hospital was above the general standard of those I have so far inspected, except possibly the one at the Southern Branch, Hampton, Va. It has a capacity for 363 patients, and the quarters for convalescents are not limited. Each ward is provided with a bath tub with hot and cold water, and in addition there is one shower bath for general use. The daily average of sick was 528—344 in hospital, 96 in convalescent companies, and 88 in barracks. The principal diseases were valvular and other organic lesions of the heart, chronic pulmonary affections, chronic bronchitis, pulmonary tuberculosis, chronic degenerative diseases of the nervous system, including insanity and epilepsy, alcoholism, chronic nephritis, and arterio-sclerosis. The total number of patients admitted during the year was 371, of whom 156 died, and 30 died elsewhere. The average age at death was 67.8 years; the death rate per 1,000 of the average present and absent was 67.39. During the year 14 members were sent to the Government Insane Asylum at Washington. The average number of hospital employees was 86 members, 16 civilians and 8 female nurses, the aggregate cost of which for the year was \$19,740.22. The number of drugs, preparations, etc., used in the dispensary was 271; the amount expended for the same was \$4,503.53, and for appliances \$158.35.

The number of members buried in the Home cemetery during the year was 112, and the total number buried there is 1,880. The total capacity of the cemetery is reported as 2,724 graves.

Farm. There are 500 acres under cultivation—480 as a farm, and 20 as a garden for vegetables. They have a large dairy at this Branch, which furnishes milk for all the members. The 50 cows during the year supplied 44,921 gallons of milk at a cost of about 12 cents per gallon; the price of which per gallon by the quantity in the nearest town is 20 cents. This was 898 gallons of milk per cow per year; while at the next highest Branch having a dairy (Central) the average was 852 gallons; and at the lowest (North-western) 644 gallons. The value of farm stock on hand June 30, 1903, was \$11,380. The average number of farm employees was 49—45 members and 4 civilians.

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Value of farm and garden products—	
Turned into commissary	\$9, 016. 12
Fed to stock	3, 107. 88
Sold	515. 00
Total	12, 639. 00
Cost of maintaining farm proper	5, 663. 00
Cost of maintaining lawn and flower garden	1, 857. 30
Cost of maintaining transportation and teams	4, 026. 03
Total	11, 546. 33

The appropriation for farm for the year was \$14,400.

The protection against fire consists of hydrants, stand-pipes, fire hose, 2 chemical engines, and 137 chemical extinguishers. These are tested every alternate Friday. There is an organized fire company of 17 men, and an auxiliary force of 8 men in each company. During the year there were small fires over the ovens in the new bakery; cottage house on the Augusta road; four frame buildings in what is called "the farm-yard"—one occupied as quarters by dairymen, one occupied as a paint shop, with temporary barracks in second story, one used as a storehouse for farm implements, with temporary barracks in second story, and a small one-story building used as a harness shop; total loss, \$4,900.

Water for all purposes is furnished on yearly contracts by the Augusta Water Company. For sewerage and drainage purposes each building is connected with a main sewer, which discharges into a stream that empties into the Kennebec River. The steam plant consists of 9 boilers, aggregating 630 horsepower. It is used for furnishing power, and for heating and cooking, and cost \$12,000. The cost of maintenance during the past fiscal year was \$33,384. This Branch has no lighting plant, but light is furnished on yearly contract by the Kennebec Light and Heat Company, which for the past fiscal year cost \$7,500. There are 10 arc and 1,950 incandescent lights. No gas. Cold storage is supplied by a refrigerator building cooled by ice harvested from a pond on the reservation. Eleven hundred tons of this ice were harvested for the year, at a cost of 14 cents a ton—or just about one-nineteenth of what it cost to make ice at the Pacific Branch.

During the year \$1,770 was expended for labor and supplies in the laundry, in which 14 men are employed.

The facilities for religious services consist of a commodious chapel; and there are both Catholic and Protestant chaplains, whose duties consist in holding religious and funeral services and visiting the sick, and general oversight of the library.

The expense for performances in the theater during the year amounted to \$6,600, or more than at any other Branch except the Central. There is no charge to members of the Home for admission, but others pay 10 cents; and the receipts for the year from this source were \$1,135.45, or about twice as much as was received at any other Branch, the next highest being the Southern, which received \$589.30.

The library contains 9,463 volumes, of which 185 were added during the year. Of newspapers, 99 are subscribed for and 104 are furnished

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free; and 33 periodicals are subscribed for, but none are furnished free. No other Branch except the Central receives so many newspapers. The number of books read or circulated during the year was reported as 35,149. Fifty volumes were condemned during the year.

The band contains 2 members of the Home and 19 civilians; and it was maintained at a total cost for the past fiscal year, including the subsistence and other allowance of civilians, of \$11,909.73.

The accounts and disbursements pertaining to the Disbursements. several funds were examined from July 12, 1902 (the date of the last inspection), to September 2, 1903, and the transactions may be summarized as follows:

Designation.	General fund.	Pension fund.	Post fund.	Total.
Balance due last inspection	\$6,121.74	\$10,307.92	\$15,723.17	\$32,152.83
By transfers from officers	415,647.50	321,466.74	5,578.65	742,691.89
From sales	22,215.55		89,597.29	111,812.84
From collections	10.37			10.37
Currency from checks	101,905.58	242,486.10	18,045.00	362,436.68
Currency redeposited	22,225.92		88,057.04	110,282.96
Total to be accounted for	568,126.66	574,259.76	217,001.15	1,359,387.57
Expended per vouchers	413,161.50	324,416.36	92,267.96	829,845.82
Transferred to officers	17,373.25			17,373.25
Checks for currency	101,905.58	242,486.10	18,045.00	362,436.68
Currency redeposited	22,225.92		88,057.04	110,282.96
Total accounted for	554,666.25	566,902.46	198,370.00	1,319,938.71
Balance	13,460.41	7,357.30	18,631.15	39,448.86
Total	568,126.66	574,259.76	217,001.15	1,359,387.57

The above amounts were on deposit in the Granite National Bank, of Augusta, Me., except the balance under the general fund, which was deposited in the Shawmut National Bank, of Boston, Mass. There was no cash on hand under any of the funds.

The receipts and expenditures for the fiscal year 1903, under the general fund amounted to \$365,533.53 and \$336,867.93, respectively. Of the total receipts, all was by transfer except \$19,711.03 from sales and other sources. There was expended by check \$250,220.03, and in currency \$86,647.90. On posthumous accounts, \$2,741 was received and \$1,956.46 disbursed. During the year the daily average number of employees under the general fund was 458, as against 427 for the preceding year. None worked during the year without pay.

The average per capita cost of maintenance for the fiscal year 1903 was \$144.79, as against \$132.52 for the preceding year—an increase of \$12.27; and this per capita cost was exceeded at only one branch, the Marion. The increase occurred as follows under the various subheads of appropriation, to wit: Current expenses, \$2.33; subsistence, \$1.32; farm, 49 cents; transportation, 33 cents; hospital, \$1.44; household, \$5.94; repairs, \$1.32. Under clothing, the per capita expense was 90 cents less than for the preceding year.

At the close of the fiscal year 1903 there were 2,598 pensioners on the rolls, their respective pensions ranging in amount from \$6 to \$46 per month, two of them receiving the last-named sum. During the year the pensions paid to members amounted to \$313,268.11.

The receipts and expenditures under the post fund for the fiscal year 1903 were reported, respectively, as \$84,401.10 (of which \$68,875.76 was from sales), and \$77,519.95 (of which \$34,421.15 was for stock); and the net gain for the year was reported as \$6,413.75. The daily average number of employees under this fund is 69, their yearly pay amounting to \$15,268.27.

No. 5.—REPORT OF AN INSPECTION OF THE SOUTHERN BRANCH, MADE SEPTEMBER 7 AND 8, 1903.

Gen. A. L. Pearson, Pittsburg, Pa. (the first vice president of the Board of Managers), whose term expires in 1906, is the local manager of this Branch, of which the post-office address is "National Soldiers' Home, Elizabeth City County, Va."

Col. William Thompson, the governor of this Home, is energetic and painstaking, and gives a great deal of personal attention to the management of its affairs. The officers all seem very efficient. Since the last inspection Maj. B. A. Beeson has succeeded Maj. W. H. H. Peck as treasurer, and Maj. J. A. Johnston has succeeded Maj. R. S. Vickery as surgeon.

The companies and barracks were generally in good order. The best barrack is Company E, commanded by Captain Miller. It is probably as good as any organization I have inspected at any of the Branches. One of the colored companies was not up to the standard of the others. The attention of the governor of the Home was called to its condition. The remaining companies and barracks were well up to standard for neatness, and compare favorably with those at the other Branches thus far inspected.

The grounds, roads, and walks are in magnificent condition. The flowers are profuse, and in a very progressive state. There had been no change during the year in the area of the reservation, which consists of but 69 acres, 43 of which are held on a twenty-years' lease that expires this year. The Home is connected with Old Point Comfort and Fort Monroe, only 2 miles distant, by street cars.

The theater, the chapel, and the quartermaster's and commissary's storehouses were in an excellent state of preservation, and noticeable for cleanliness and orderly arrangement. There are 15 barracks, 4 of brick and 11 of frame. Their original capacity has not been exceeded during the year. None of the men were sleeping on floors. The average dormitory air space per man is 880 cubic feet. The barrack bath tubs, of which there are 59, are conveniently located and sufficient, there being an average of 32 men to each tub—the smallest number at any Branch except Danville. There are 78 urinals conveniently placed in the various barracks, to each of which there is an average of about 35 men. The storehouses, two in number, the excellent condition of which has already been referred to, are constructed of brick.

During the fiscal year a new frame barrack was constructed, and three new water-tube boilers installed, at a cost of \$21,080.03; and repairs to the amount of \$29,309.19 were made.

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The total number of officers and members present and absent on June 30, 1903, was 3,747, of whom 2,395 were present and 1,352 were absent. This was a net loss of 406 from the preceding year. The gain and loss may be indicated as follows:

Gain:	
By appointment.....	2
By first admission.....	139
By readmission.....	82
By transfer from other Homes.....	16
	<hr/> 239
Loss:	
By resignation.....	2
By transfer to other Homes.....	66
By discharge.....	155
By dishonorable discharge.....	12
By dropped from rolls.....	130
By death.....	269
By transfer to insane asylums.....	11
	<hr/> 645
Net loss.....	406

The average number of officers and members present and absent during the year was 3,932 (a decrease of 485 from the preceding year), of whom 2,773 were present and 1,159 were absent. The greatest number present during the year was 2,911 on February 7, 1903, and the lowest was 2,395 on June 30, 1903. An average of 11 were temporarily cared for. The whole number cared for during the year was 4,390, a decrease of 475 from the preceding year.

The average age of the members is 63.10 years.

A census of the camp taken on September 7, 1903, showed 2,619 officers and members present in camp, and 1,134 absent; total, 3,753. At that date there were 183 vacant beds in the barracks, and 25 in the hospital. Two members were in confinement. There had been a net gain of 1 member since June 30, 1903.

A review was held on September 7, at which 1,864 men were in line, all in uniform. There were also present in camp, but not in line, 771 men; total present, 2,635. There were then 1,131 men absent from camp, only two of whom were without leave.

The principal offenses committed during the year were drunkenness, absence without leave, disorderly conduct, and bringing whisky into camp. The total number of members reported as offending was 1,687—those offending constituting 60.81 per cent of the average present—by far the largest of any of the Branches. The total number of arrests was 1,687; of trials, 1,629.

On June 30, 1903, there was clothing on hand for issue to the value of \$8,913.17; \$31,857.88 worth was issued to members during the year, while \$34,000.76 worth was condemned, and there was \$12,382.34 worth awaiting condemnation.

The food furnished the members is satisfactory in every way, abundant in quantity, of good quality, and of suitable variety. The arrangements for cooking and serving it were excellent. The average number of persons employed in the kitchen and dining hall, respectively, was 36 and 82. It was estimated that about 48,000 pounds of swill and garbage are

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produced per month, which are sold to the highest bidder, the sum realized from this source for the year being \$644.38. During the same period subsistence property and stores that cost \$643.04 were condemned, and such of it as was sold brought \$2.88.

The average daily cost of a ration (including vegetables, etc., grown on the Home grounds) was 14.77 cents; of the hospital ration (including extra diet), 16.97 cents.

The records show that the following amounts of flour were expended and pounds of bread fabricated during the months stated:

	Flour expended.	Bread fabricated.
	<i>Pounds.</i>	<i>Pounds.</i>
April.....	43,512	49,880
May.....	44,100	52,674
June.....	25,872	51,504
July.....	34,498	44,594

The hospital, under the care of Major Johnston, is equal to the best. It is quite as good as the hospital at Togus, Me. Major Johnston is a young man, but is very efficient, and has the reputation of being a good practitioner as well as an admirable administrative officer. His hospital, in all its parts, was extremely creditable.

The hospital has a capacity for 521 patients, and there are additional quarters for 133 convalescents. The bathing facilities are adequate, consisting of 15 porcelain-lined tubs (an average of about 35 patients to the tub), and 2 combined needle and shower baths. The daily average of sick was 583—403 in hospital, 120 in convalescent companies, and 60 in barracks. The principal diseases are rheumatic, gastro-intestinal, respiratory, and heart diseases. The number of patients admitted to the hospital during the year was 529, of whom 201 died therein, and 68 died elsewhere. The average age at death was 68.58 years, the death rate per 1,000 of the average present and absent being 61.27. Ten members were sent to insane asylums during the year. The average number of employees was 85 members, 21 civilians, and 10 female nurses, at a cost for the year of \$21,602.58. The amount expended for drugs during the year was \$6,178.38; for appliances, \$3,547.38.

The number of members buried in the Home cemetery during the year was 186. The total number buried there is 3,397—a majority of 624 over the average number of living members present during the past fiscal year. The total capacity of the cemetery is unknown.

There is no land under cultivation as a farm at this Branch, and only 3 acres are cultivated as a garden for vegetables. No cows are kept. The price of milk per gallon by the quantity in the nearest town is 25 cents, which is higher than at any other Branch. The value of farm stock on hand June 30, 1903, was \$1,600. The average number of farm employees is 33—32 members and 1 civilian.

Value of farm and garden products turned into commissary.....	\$332.58
(No farm under cultivation.)	
Cost of maintaining lawn and flower garden.....	2,556.00
Cost of maintaining transportation and teams.....	4,599.27
Total.....	7,155.27

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The appropriation for farm for the year was \$9,850.

Fire protection. The protection against fire consists of 2 chemical engines, 9 hydrants, 6 standpipes, 157 fire extinguishers, 1 hook and ladder truck, 2 hose reels with 1,200 feet of hose, and fire buckets. This apparatus is inspected once a month. The fire organization consists of a company of 66 men. In addition each Home company has 4 men appointed to handle the fire hose of standpipes, and fire extinguishers in barracks. There were no fires during the year.

Engineer department. Fresh water is obtained from wells and the Newport News Water Company. The water-closets are flushed by a salt-water system. The drainage and sewage are disposed of by a gravity and pumping system, which was in good condition. The steam plant consists of 12 boilers, aggregating 900 horsepower, which is used for heating and cooking purposes as well as for furnishing power. It cost, approximately, \$44,000, and was maintained during the fiscal year at an expense of \$43,508.63. There is no electrical plant, but light is furnished by the Newport News and Old Point Railway and Electric Light Company, the lamps and fixtures being provided by the Home. This service for the past fiscal year cost \$10,542. There are 21 arc and 1,900 incandescent lights. No gas. The cold-storage and ice plant consists of a 10-ton ice machine, which manufactured 912 tons of ice last year, at a cost of \$1.20 a ton.

Twenty men are employed in the laundry, at a cost for the year of \$4,669.75 for labor and material.

Religious services. The facilities for religious services are ample, the chapel being an excellent one, and well kept. In addition to holding religious and funeral services, the chaplains have superintendence of the library, and sometimes have served on boards of survey, but this latter duty has lately been discontinued.

Amusements. The theater building was in good condition, cleanly, and well cared for. During the year the expenses for performances amounted to \$5,895, which was exceeded only by the Eastern and the Central Branches. There is no charge to members for admission, but others pay 15 cents; and during the year the receipts from this source were \$589.30, which was exceeded only by the Eastern Branch.

At the close of the fiscal year the library contained 9,235 volumes, of which 290 had been added during the year, and 750 volumes were condemned during the year. Five newspapers and 26 periodicals are subscribed for, and 23 newspapers and 7 periodicals are furnished free. It was stated that during the year 42,292 books were read or circulated, which is the best showing made at any of the Branches, the Marion coming second with 40,897, and the Central third with 40,413.

There are in the band 1 member of the Home and 24 civilians, and its total cost for the year, including the subsistence and other allowances of civilians, was \$9,324.

Disbursements. The accounts and disbursements pertaining to the several funds were examined from September 12, 1902, the date of the last inspection, to September 5, 1903, and may be summarized as follows:

NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS. 313

(This statement includes the consolidated accounts of two treasurers.)

Designation.	General fund.	Pension fund.	Post fund.	Total.
Balance due, last inspection.....	\$42,814.71	\$123,415.12	\$8,295.01	\$174,524.84
By transfers from officers.....	422,358.77	341,860.06	12,651.75	776,870.58
From sales.....	14,561.15		66,439.37	81,000.52
Currency from checks.....	97,331.50	213,554.60	17,029.39	327,915.49
Currency redeposited.....	14,674.82	2,619.55	67,569.51	84,863.88
Total to be accounted for.....	591,740.95	681,449.33	171,985.03	1,445,175.31
Expended per vouchers.....	390,548.33	436,752.22	69,788.27	897,088.82
Transferred to officers.....	64,949.83	12,162.38	9,553.31	86,665.52
Checks for currency.....	97,331.50	213,554.60	17,029.39	327,915.49
Currency redeposited.....	14,674.82	2,583.55	67,569.51	84,827.88
Total accounted for.....	567,504.48	665,052.75	163,940.48	1,396,497.71
Balance due.....	24,236.47	16,396.58	8,044.55	48,677.60
Total.....	591,740.95	681,449.33	171,985.03	1,445,175.31

The above amounts were on deposit with the Norfolk National Bank, of Norfolk, Va., except \$115, cash on hand under the general fund, and \$1,073.88 under the post fund.

The receipts and expenditures under the general fund for the fiscal year ending June 30, 1903, amounted to \$458,675.54 and \$379,225.32, respectively. Of the total receipts all was by transfer except \$14,658.66 from sales and other sources. There was expended by check \$282,308.46, and in currency \$96,916.86. On posthumous accounts \$2,488.99 was received and \$1,684.88 disbursed.

During the year the daily average number of employees under the general fund was 566 (1,223 are authorized), as against 852 for the preceding year—a decrease of 286. The amount paid them was \$96,896.30, as against \$85,230.84 for the preceding year—an increase of \$11,665.46. A daily average of 14 men worked in construction, repairing roadways and sidewalks, and in policing the Home grounds, without pay.

The average per capita cost for maintenance at this Branch during the fiscal year 1903 was \$140.33, as against \$126.11 for the preceding year—an increase of \$14.22. This marked increase occurred as follows, under the various subheads of appropriation, to wit: Clothing, 45 cents; household, \$13.97; hospital, \$1.28; repairs, 37 cents; farm, 42 cents. The expenditures were per capita 26 cents less for current expenses and \$2.01 less for subsistence than for the preceding year.

At the close of the fiscal year 1903 there were 3,465 pensioners on the rolls, whose pensions ranged from \$6 to \$72 per month, one member receiving the last-named sum. During the year the pensions paid to members aggregated \$439,962.71. One pensioner had more than \$1,000 balance to his credit.

The receipts and expenditures under the post fund for the fiscal year 1903 were, respectively, \$71,903.22 (of which \$59,487.29 was from sales) and \$70,128.09 (of which \$33,706.61 was for stock), and the net gain for the year was \$186.41. The average daily number of employees under this fund is 82, and for the past fiscal year the amount paid them was \$16,410.64.

A complaint was lodged with me by a discharged member, who stated that he was not allowed to live outside the Home to raise chickens, that his fowls had been unjustly sacrificed, and that he had been refused an honorable

discharge from the Home. An inquiry into the matter showed that the man had no just and reasonable grounds for complaint.

**NO. 6.—REPORT OF AN INSPECTION OF THE CENTRAL BRANCH, MADE
OCTOBER 9 TO 12, 1903.**

Gen. Charles M. Anderson, Greenville, Ohio, whose term of office expires in 1906, is the local manager of this Branch, of which the official post-office address is: "National Military Home, Montgomery County, Ohio."

Officers. There had been no change in the officers of this Branch since the previous inspection, all of whom are efficient and zealous in the performance of their duties.

General conditions. The buildings, including storehouses, amusement hall, power plant, barracks, and hospital, etc., were in general average good order, except barracks 21 and 22, which were not as neat and orderly as the others. In all other respects the Home was in a very creditable condition. A number of small matters were called to the attention of the governor, Col. J. B. Thomas, for immediate correction. The buildings are in a fine state of repair, the roads are well kept, and the grounds are beautifully ornamented. They have at this Home, as well as at others, lakes, boats, aquatic birds, and flowers and aquatic plants in profusion.

Reservation. There had been no change during the year in the reservation, which consists of 578 acres of land, within easy and convenient access to the city of Dayton by steam and electric roads. The grounds are splendidly improved, presenting a very attractive appearance. Only three other Branches of the Home have larger reservations.

Buildings. This Branch has 29 barracks, 18 of which are brick and 11 are frame. It is claimed that in summer they are occupied by about the number of men for which they were originally intended, but in the winter several hundred additional men have to be provided for in them. None of the men were sleeping on floors. The average dormitory air space per man is about 835 cubic feet. There are 19 barrack bath tubs, and in addition there is a general bath house with 31 tubs, and 3 tubs in the boiler house, there being an average of about 70 men to each tub. It was stated that 50 more bath tubs would not be too many—that is, 1 tub for each barrack floor. There are 159 urinals located in the barrack toilet rooms and ample urinal accommodations in the general latrines.

There are 4 storehouses, conveniently located and in good condition. During the year improvements (not repairs) were made to the amount of \$39,576.25. Among the improvements were the increase and betterment of the water supply and the renewal and completion of the electric-light plant; one old frame barrack was torn down and a propagating house was built. Repairs were made at a cost of \$61,420.04. The most considerable repair in one item was the plumbing of the hospital wards, at a cost of \$3,424.

Population. The total number of officers and men present and absent on June 30, 1903, was 5,761, of whom 4,487 were present and 1,274 were absent. This was a net gain of 72 over the preceding year. The gain and loss may be indicated as follows:

Gain:	
By first admission	691
By readmission	428
By transfer from other Homes	179
	<hr/> 1, 298
Loss:	
By transfer to other Homes	111
By discharge	419
By dishonorable discharge	41
By dropped from rolls	183
By death	455
By transfer to Government insane asylum	17
	<hr/> 1, 226
Net gain	72

The average number of officers and members present and absent during the year was 5,787 (an increase of 37 over the preceding year), of whom 4,729 were present and 1,058 were absent. The greatest number present during the year was 4,984, on January 28, 1903, and the lowest number present was 4,390, on July 10, 1902. An average of 20 were temporarily cared for; the whole number cared for during the year was 6,987, a decrease of 37 from the previous year.

The average age of the members of this Branch was reported as 65.63 years.

A census of the camp was taken on October 12, 1903, and showed 4,659 officers and members present in camp, and 1,168 absent; total, 5,827. At that date there were 124 beds vacant in barracks and 26 in hospital. There had been a net gain of 28 members since June 30, 1903.

The principal offenses committed during the year were reported as drunkenness and absence without leave. The total number of members reported as offending was 1,761, or 37.2 per cent of the average present, this percentage being exceeded only by the Southern Branch. The total number of arrests was 2,676, and of trials 1,920.

It was reported that on June 30, 1903, there was clothing on hand for issue to the amount of \$9,172.63; issued and in use by members, \$106,888.14; awaiting condemnation, \$5,540.95. During the year the clothing condemned cost \$52,183.97.

The food at this Home, as at all the others, is entirely satisfactory, as well as the arrangements for cooking and serving it. The average number of persons employed in the kitchen and dining room, respectively, was 74 and 185. It was estimated that about 160,000 pounds of swill and garbage are produced each month, which are sold on annual contract, and the sum realized from this source during the year was \$765.

The average daily cost of a ration (including vegetables, milk, and fruit produced on the Home grounds) was reported as 15.10 cents, and of the hospital ration (including extra diet) 16.23 cents.

The hospital was in an excellent state of preservation, order, and cleanliness. It has a capacity for 650 patients, with quarters for 230 convalescents. The facilities for bathing consist of one bath tub in each ward, or 20 in all, there being an average of about 25 patients to each tub. During the year 1,789 patients were admitted; the daily average of sick was 929—

529 in hospital, 220 in convalescent companies, and 180 in barracks or sick call.

The principal diseases during the year were alcoholism, influenza, rheumatism, gastritis, arterio-sclerosis, naso-pharyngeal catarrh, surgical operations, conjunctivitis, eczema, chronic ulcers, dislocations, fractures, cardiac hypertrophy, asthma, bronchitis, cystitis, hydrocele, nephritis, cerebral hemorrhage, hemiplegia, and catarrh. Of the patients admitted to the hospital during the year 359 died, and 96 members of the Branch died elsewhere than in the hospital. The average age at death was reported as 69.98 years, which was exceeded only at the Northwestern Branch. The death rate per 1,000 present and absent was 78.62, being the highest of any of the Branches. Seventeen members were sent to insane asylums during the year. The average number of hospital employees was reported as 140 members, 33 civilians, and 14 female nurses; and their cost for the year was \$32,500.67. The number of drugs, preparations, etc., used in the dispensary was 257; and the amount expended for drugs during the year was \$11,070.62; and for appliances \$1,375.

During the year 351 members were buried in the Home cemetery; the total number interred therein being 7,530—a majority of 2,801 over the average number of living members at the Home. The conditions are such that the cemetery can be enlarged to meet all requirements.

About 275 acres are under cultivation as a farm, but there is no garden for vegetables. Thirty-four cows are kept, the yearly yield of which is 29,981 gallons of milk, at a cost of 6 cents per gallon for feed and dairymen. No other Branch produced milk so cheaply, but each Branch that keeps cows produced more milk than was produced here. The price of milk per gallon, by the quantity, in the nearest town is 16 cents. The value of farm stock on hand June 30, 1903, was \$4,800. The average number of farm employees was 91—88 members and 3 civilians.

Value of farm and garden products:

Turned into commissary	\$7, 674. 46
Fed to stock	2, 632. 00
Sold	2, 083. 21
Total	12, 389. 67
Cost of maintaining farm proper	6, 507. 90
Cost of maintaining lawn and flower garden	8, 912. 72
Cost of maintaining transportation and teams	3, 399. 32
Total	18, 819. 94

The appropriation for farm for the year was \$17, 500.

As a protection against fire, each barrack has 50 or more feet of hose, and a number of fire buckets filled with water on each floor; all the hospital wards have from 60 to 100 feet of hose, and fire buckets; a fire engine, ladder truck, 2 hose reels, and 3 chemical engines are kept at the fire department station, and 1 hose reel at the laundry; 1 hose reel at the hospital; 6 fire extinguishers on ladder truck; 25 at the hospital, and 27 distributed through various other buildings in camp. There are 34 fire hydrants and a standpipe with 64 pounds pressure. Men are employed to daily make the rounds to test the hose, hydrants, etc. A large and efficient fire company is maintained, which is well drilled,

The average per capita cost for maintenance at this Branch for the fiscal year 1903 was \$137.16, as against \$132.57 for the preceding year, an increase of \$4.59. Only the Danville and Western Branches had lower per capita cost for the year than this.

At the close of the fiscal year 1903 there were 5,310 pensioners on the rolls at this Branch, and their pensions ranged in amount from \$6 to \$72 per month, but only one member received the last-named sum. During the year the pensions paid to members here amounted to \$730,125.60. Nine members had more than \$1,000 to their credit.

The division of the cash book into four volumes seems to increase the labor of recording the receipts from the pension agents and the disbursements on the rolls fourfold, and the possibilities of error in the same ratio. The trial balance of August 31 showed a net discrepancy between three of the cash books and corresponding ledgers of \$72. Since that date, however, after much checking an error of \$69 was discovered, which reduced the difference to \$3.

The receipts and expenditures under the post fund for the fiscal year 1903 were reported, respectively, as \$165,273.98 (of which \$130,664.29 was from sales), and \$140,599.63 (of which \$67,834.20 was for stock), and the net gain for the year was reported as \$30,061.09. The average daily number of employees under this fund was 130, and their aggregate yearly pay was \$30,164.83.

The method found in use to account for money received for sale of transportation affords no check upon the person by whom the money is received. He may or he may not turn over all he receives, as no check is made by the officer in charge between the issue book and cash received.

NO. 7.—REPORT OF AN INSPECTION OF THE MARION BRANCH, MADE OCTOBER 13 AND 14, 1903.

Col. George W. Steele, Marion, Ind., whose term of office expires in 1908, is the local manager of this Branch, of which the official post-office address is: "National Military Home, Grant County, Ind."

The governor, Col. Justin H. Chapman, is a man of superior executive ability, and has a clever faculty for directing and handling men. The only changes in the officers during the year are the appointments of Dr. O. M. Davis as second assistant surgeon, Dr. J. A. Mattison as third assistant surgeon, vice Dr. L. H. Marks, and Dr. O. W. McQuown.

The buildings, barracks, quarters, storehouses, power plant, stables, outhouses, walks, roads, and grounds were in the most commendable state of perfection. Order characterizes all departments of this institution, from the barracks to the stables, including the waste places where usually old material is thrown in heaps to await the action of an inspector for condemnation. Everything is cleanly, from the bed and table linen to the floors and furniture. In fine, the eye for order and cleanliness and the master mind for direction permeates and dominates this institution so completely that thereby it is a model and is a fit example for study for all institutions of a similar nature.

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The accounts and disbursements pertaining to the several funds were examined from September 2, 1902, the date of the last inspection, to October, 1903, and may be summarized as follows:

Designation.	General fund.	Pension fund.	Post fund.	Total.
Balance due last inspection.....	\$66,496.34	\$55,794.21	\$23,639.10	\$145,931.65
By transfers from officers.....	616,165.00	895,178.39	10,724.64	1,522,068.63
From sales.....	20,462.58		162,541.82	183,004.40
From collections.....	7,456.18		3,408.26	10,864.44
Currency from checks.....	212,006.68	664,032.54	33,182.87	909,222.09
Currency redeposited.....	27,490.73	22,600.00	176,240.96	226,331.69
Total to be accounted for.....	950,079.51	1,637,605.74	409,732.64	2,997,417.89
Expended per vouchers.....	671,318.65	870,298.86	154,662.74	1,696,280.25
Transferred to officers.....	14,315.88	10,724.64	5,500.00	30,540.52
Checks for currency.....	212,006.68	664,032.54	33,182.87	909,222.09
Currency redeposited.....	27,490.73	22,600.00	176,240.96	226,331.69
Total accounted for.....	925,131.94	1,567,656.04	369,586.56	2,862,374.54
Balance.....	24,947.57	69,949.70	40,146.08	135,043.35
Total.....	950,079.51	1,637,605.74	409,732.64	2,997,417.89

The above amounts were on deposit in the National Bank of Commerce, New York, and the Third National Bank, of Dayton, Ohio, except the following amounts of cash on hand: General fund, \$186.80; pension fund, \$48.59; post fund, \$509.75.

The receipts and expenditures under the general fund for the fiscal year ending June 30, 1903, were \$604,742.88 and \$633,672.77, respectively. Of the total receipts all was by transfer except \$26,083.57 from sales and other sources. On posthumous accounts \$6,387.51 was received, and \$4,568.58 disbursed.

During the year the average daily number of employees under the general fund was 1,012 (1,050 are authorized), as against 954 for the preceding year—an increase of 58; and the amount paid them was \$180,808.37, as against \$172,312.26 for the previous year—an increase of \$8,496.11. An average of from 50 to 75 worked without pay, principally in the kitchen, and in policing the grounds.

If the transfer of members between barracks was restricted and made only as demanded by the necessities of the service, possibly much of the extra clerical work could be avoided.

The use of a personal card for the keeping of each man's clothing account, to be transferred with the member, is suggested.

The shop accounts were not in a satisfactory condition, as no record was made of property received; and but little supervision seemed to be exercised by the officer charged with that duty.

The records show that the following articles were fabricated from flour issued to the bakery:

	Flour.	Fabricated.			
		Bread.	Pies.	Cake.	Cookies.
1903.	Pounds.				
June.....	64,000	73,850	9,250	3,600	5,780
August.....	66,640	72,396	10,326	4,586	5,326
	+2,640	-1,464	+1,076	+986	-454
July.....	58,604	70,500	9,020	3,600	5,800
September.....	54,880	70,100	6,000	3,700	5,900
	-3,724	-400	-3,020	+100	+100

The average per capita cost for maintenance at this Branch for the fiscal year 1903 was \$137.16, as against \$132.57 for the preceding year, an increase of \$4.59. Only the Danville and Western Branches had lower per capita cost for the year than this.

At the close of the fiscal year 1903 there were 5,310 pensioners on the rolls at this Branch, and their pensions ranged in amount from \$6 to \$72 per month, but only one member received the last-named sum. During the year the pensions paid to members here amounted to \$730,125.60. Nine members had more than \$1,000 to their credit.

The division of the cash book into four volumes seems to increase the labor of recording the receipts from the pension agents and the disbursements on the rolls fourfold, and the possibilities of error in the same ratio. The trial balance of August 31 showed a net discrepancy between three of the cash books and corresponding ledgers of \$72. Since that date, however, after much checking an error of \$69 was discovered, which reduced the difference to \$3.

The receipts and expenditures under the post fund for the fiscal year 1903 were reported, respectively, as \$165,273.98 (of which \$130,664.29 was from sales), and \$140,599.63 (of which \$67,834.20 was for stock), and the net gain for the year was reported as \$30,061.09. The average daily number of employees under this fund was 130, and their aggregate yearly pay was \$30,164.83.

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The governor, Col. Justin H. Chapman, is a man of superior executive ability, and has a clever faculty for directing and handling men. The only changes in the officers during the year are the appointments of Dr. O. M. Davis as second assistant surgeon, Dr. J. A. Mattison as third assistant surgeon, vice Dr. L. H. Marks, and Dr. O. W. McQuown.

The buildings, barracks, quarters, storehouses, power plant, stables, outhouses, walks, roads, and grounds were in the most commendable state of perfection. Order characterizes all departments of this institution, from the barracks to the stables, including the waste places where usually old material is thrown in heaps to await the action of an inspector for condemnation. Everything is cleanly, from the bed and table linen to the floors and furniture. In fine, the eye for order and cleanliness and the master mind for direction permeates and dominates this institution so completely that thereby it is a model and is a fit example for study for all institutions of a similar nature.

No changes have been made since the previous report in the acreage of the reserve, which consists of some 300 acres, supplemented by a lot of adjacent land which is leased for the purpose of increasing the supply of natural gas. The grounds are in perfect order and very attractive in appearance. There is communication with the town of Marion, 4 miles distant, by electric railway.

The payment, on July 20, 1903, of \$347 in advance for lease of land from July 1, 1903, to June 30, 1904, is apparently at variance with the statutory provisions that no advance payments, except for services under certain conditions, shall be made.

This Branch has 12 barracks, all brick, one of which is a new combination structure completed during the past year. No members are, or have been during the year, sleeping on floors. The average dormitory air space per man is 822.5 cubic feet. There are 30 bath tubs conveniently located in the barracks, with an average of about 50 men to the tub. There are 96 urinals, 8 in each barrack, which are claimed to be sufficient. There is 1 storehouse, the quartermaster and commissary building, which was in excellent condition.

A new heating plant was in process of installment. The cost of the improvements (not repairs) made during the year was \$114,570, and of repairs (not constructions) \$23,806.11.

The total number of officers and members present and absent on June 30, 1903, was 2,336, of whom 1,618 were present and 718 were absent. This was a decrease of 56 from the preceding year. The net gain and loss may be indicated as follows:

Gain:	
By first admission.....	341
By readmission.....	169
By transfers from other Homes.....	89
	<hr/> 599
Loss:	
By transfer to other Homes.....	105
By discharge.....	356
By dishonorable discharge.....	16
By dropped from rolls.....	45
By death.....	121
By transfer to Government insane asylum.....	12
	<hr/> 655
Net loss.....	<hr/> 56

The average number of officers and members present and absent during the year was 2,361 (a decrease of 41 from the preceding year), of whom 1,750 were present and 611 were absent. The greatest number present during the year was 1,888, on February 27, 1903; the smallest number present was 1,598, on June 11, 1903. An average of 10 were temporarily cared for; the whole number cared for during the year was 2,991, an increase of 59 over the previous year.

The average age of the members of this Branch is 64.13 years, which is the average age of the members of the Home.

A census of the camp taken on October 15, 1903, showed 1,672 officers and members present in camp and 616 absent; total, 2,288. At that date there were 74 beds vacant in barracks and 11 in the hospital; no members were in confinement. There had been a net gain of 58 members since June 30, 1903.

No intertransfers of members are allowed except between barracks and hospital and to and from the guard barracks. This saves much clerical labor.

The discipline obtaining among the members of this branch is very commendable. The principal offenses committed during the year were: Bringing intoxicating liquors within the limits of the camp, drunk on duty, absent without leave while under sentence, drunk and disorderly, and absent without leave. The total number of members reported as offending was 271, or 15.5 per cent of the average present. Only the Pacific and Western Branches showed a lower percentage at this inspection. The total number of arrests was 543, and of trials, 492.

On June 30, 1903, there was clothing on hand for issue to members to the value of \$11,291.26; issued to members, \$36,783.51; awaiting condemnation, \$5,163.66; condemned during the same period, the original cost of which was \$23,672.34.

The character of the food furnished the members and its preparation are satisfactory. Average number of employees in the kitchen, 33; in the dining hall, 88. The estimated amount of swill and garbage produced is 7,600 pounds per month, which is sold for about \$150 per year. During the year subsistence stores were condemned that cost \$781.71, and were sold for \$4.

The average daily cost of a ration, including the components produced on the Home grounds, was 11.83 cents; and of the hospital ration, including extra diet, 16.9 cents. No other Branch furnished the average subsistence ration at so low a cost.

The hospital, which was in magnificent order, has a capacity for 215 patients, with barracks for 94 convalescents. The bathing facilities consist of 4 bath tubs, or one for about every 50 patients. The daily average of sick was reported as 350—199 in hospital, 86 in convalescent companies, and 65 in barracks or sick call. The principal diseases that prevailed during the year were alcoholism, gastritis, and myalgia. The total number of patients admitted during the year was 621, of whom 88 died in hospital and 33 members died elsewhere. The average age at death was reported as 67.08 years. The death rate per 1,000 of the average present and absent was 51.25—only the Danville and Northwestern Branches having lower rates. Twelve members were sent to insane asylums during the year. The average number of hospital employees was 58 members, 22 civilians, and 11 female nurses; their cost for the year was \$15,408. The number of drugs, preparations, etc., consumed was 412; the amount expended therefor during the year was \$5,377.34, and for appliances, \$1,550.75.

The number of members buried in the Home cemetery during the year was 88, and the total number interred therein is 864. It is estimated that the cemetery has a total capacity of 1,200 graves.

There are 56 acres under cultivation, 46 as a farm and 10 as a garden for vegetables. No cows are kept. The price of milk per gallon, by the quantity, in the nearest town, is 15 cents. The value of farm stock on hand on June 30, 1903, was \$1,860. The average number of farm employees is 46—44 members and 2 civilians.

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Value of farm and garden products:	
Turned into commissary	\$3, 789. 11
Fed to stock	663. 67
Sold	819. 56
Total	5, 272. 34
Cost of maintaining farm proper	6, 280. 08
Cost of maintaining lawn and flower garden	1, 592. 31
Cost of maintaining transportation and teams	2, 316. 20
Total	10, 188. 59

The appropriation for farm for the year was \$10,000.

Fire protection. The protection against fire consists of a large standpipe, 240,000 gallons capacity, kept full, connected by large pipe with water system and pumps; pressure, 60 pounds; 26 fire hydrants, located at the most convenient places about the buildings, with standpipe pressure on them; 2-inch standpipes and hose in all buildings; 1 steam pump, located in the laundry boiler room, 200,000 gallons capacity, with 200 feet of standard fire hose attached; 1 large hose reel with 600 feet of standard fire hose; 2 chemical engines, and 102 fire extinguishers. The fire organization consists of 3 companies, composed of members and civilian employees (58 men in all), under charge of the chief engineer, and efficiently instructed. No fires occurred during the year.

Engineer department. The system of water supply consists of three 6-inch and three 8-inch wells, 87 feet deep, into coarse gravel. The water is pumped into the standpipe, and from there into the general system. The supply is said to be insufficient. There is a gravity system of drainage and sewerage to the river which is in good condition. There is no general steam plant at this Branch, but a hot-water heating system was being installed at a cost of \$100,000. There is a small steam plant at the dining room and kitchen, used for heating and cooking, which cost about \$2,300, and was maintained during the fiscal year at an expense of \$650. The lighting plant consists of an alternating current system of ample capacity, which is maintained at a cost of \$3,783.70 per annum. There are 24 arc and 5,200 incandescent lights. There is no cold storage or ice plant. Ice is bought at \$3 a ton, which is more than it costs at any other Branch except the Danville.

Eighteen men are employed in the laundry, at a cost of \$3,742.82 for labor and materials.

Religious services. The facilities for religious services consist of a double chapel for Protestants and Catholics, each chapel having a seating capacity of about 300. The chaplains hold services twice each week, take charge of funerals, and visit the sick.

Amusements. The theatrical performances given during the year cost \$1,600. There is no charge to members for admission, but others pay from 10 to 50 cents each; the receipts from this source during the year being \$85.75.

At the close of the fiscal year the library contained 4,374 volumes, of which 115 had been added during the year, while 142 had been condemned and burned. Twenty newspapers and 12 periodicals are subscribed for, and 25 newspapers and 1 periodical are furnished free.

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During the year 40,897 books were read or circulated, this being exceeded only by the Southern Branch.

The band consists of 1 member of the Home and 21 civilians, and is maintained at a cost, including subsistence and other allowances of members, of \$12,606.07.

The accounts and disbursements pertaining to the several funds were examined from August 28, 1902, the date of the last inspection, to October 12, 1903, and the transactions may be summarized as follows:

Designation.	General fund.	Pension fund.	Post fund.	Total.
Balance due last inspection	\$33,023.55	\$72,766.34	\$2,604.00	\$108,393.89
By transfers from officers	406,932.50	287,250.58	1,187.05	694,370.13
From sales	7,536.41	357.00	42,584.59	50,478.00
From collections	1,017.19	3.93	296.70	1,317.82
From members' deposits		1,053.25		1,053.25
Currency from checks	97,663.71	235,216.85	8,400.84	341,281.40
Currency redeposited	8,565.73	1,749.82	42,646.78	52,962.33
Total to be accounted for	553,739.09	598,397.77	97,719.96	1,249,856.82
Expended per vouchers	387,751.34	347,645.84	40,783.08	776,180.26
Transferred to officers	8,800.00			8,800.00
Checks for currency	97,663.71	235,216.85	8,400.84	341,281.40
Currency redeposited	8,565.73	1,749.82	42,646.78	52,962.33
Total accounted for	502,780.78	584,612.51	91,830.70	1,179,223.99
Balance	50,958.31	13,785.26	5,889.26	70,632.83
Total	553,739.09	598,397.77	97,719.96	1,249,856.82

The above amounts were on deposit with the Indiana National Bank of Indianapolis, except \$286.23 cash on hand under the post fund.

The receipts and expenditures under the general fund for the fiscal year ending June 30, 1903, were \$342,637.59 and \$310,496.70, respectively. Of the total receipts all was by transfer except \$7,059.03 from sales and other sources. The sum of \$927.51 was received on posthumous accounts, and \$1,083.22 was disbursed.

During the year the daily average number of employees under the general fund was 429 (435 are authorized) as against 467 for the preceding year—a decrease of 38; and the amount paid them was \$82,856.34, as against \$78,522.65 for the previous year—an increase of \$4,333.69. A daily average of 2 worked without pay, serving as council of administration on deceased members' effects.

The shop accounts are not kept, as contemplated by the regulations of the Home, so as to show the quantity of material received; and to the cost of the material expended is added 10 per cent. The bakery accounts are kept by the commissary of subsistence, who states that he reports monthly to the quartermaster. The issues to the shoe shop did not seem to be governed by the amount of work done there, as shown by the record.

The average per capita cost at this Branch for the fiscal year 1903 was \$156.98 (the highest of any of the Branches) as against \$128.90 for the preceding year—an increase of \$28.08. This large increase occurred in the various sub-heads of appropriation, as follows: Current expenses, \$1.51; subsistence, \$3.66; clothing, \$7.03; household, \$11.17; hospital, \$2.26; repairs, \$1.43; farm, \$1.02.

At the close of the fiscal year 1903 there were 2,199 pensioners on the rolls, and their pensions ranged in amount from \$6 to \$30 per month. During the year the pensions paid to members aggregated \$280,868.03. One pensioner had more than \$1,000 to his credit.

The receipts and expenditures under the post fund for the fiscal year were reported, respectively, as \$34,669.89 receipts, of which \$27,950.51 was from sales; and \$36,997.49 expenditures, of which \$21,222.57 was for stock; and the net gain for the year was reported as \$2,638.99. The average daily number of employees under this fund is 62, and the amount paid them during the fiscal year was \$6,637.76.

This is the only Branch at which no beer is sold.

NO. 8.—REPORT OF AN INSPECTION OF THE DANVILLE BRANCH, MADE OCTOBER 17 AND 18, 1903.

Gen. Thomas J. Henderson, Princeton, Ill., whose term expires in 1908, is the local manager of this Branch, of which the post-office address is: "National Home, Danville, Ill."

The governor, Col. Isaac Clements, is a very active and energetic man and gives his undivided attention to his duties. There had been no change in the officers of the Branch since the previous inspection.

The buildings, including the barracks, storehouses, and outhouses, were found generally in good condition.

Some of the barracks were better than others. Where a barrack, or parts of it, did not come up to the general standard the governor's attention was called to it, and orders were immediately given by him to correct such defects.

The walks, roads, and grounds are kept in thoroughly good condition, and there is in evidence considerable ornamentation for a Branch comparatively new, as this one is. It is destined to be one of the choice Homes in the middle west when they complete the grades and ornamentation.

There are about 320 acres in the reservation, in which there had been no change during the last fiscal year. The Home is about 3 miles from the town of Danville, with which it has ample facilities for passenger and freight transportation.

There are 14 barracks, all brick, and their capacity has never been taxed. The average dormitory air space per man is 1,070 cubic feet, which far exceeds that of any other Branch. There are 84 bath tubs, 1 in each ward of each barrack, being an average of only 17 men to each tub. The urinals are 252 in number and are sufficient.

There is 1 storehouse, the contents of which were classified and orderly arranged, and the condition of which was good.

A commissary's residence was constructed during the year, at a cost of \$6,000. Repairs (not constructions) were also made to the amount of \$25,636.65.

The total number of officers and members present and absent on June 30, 1903, was 3,209, of whom 2,255 were present and 954 were absent—an increase of 195 over the preceding year. The gain and loss may be stated for reference as follows:

Population.

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Gain:		
By first admission.....	624	
By readmission.....	321	
By transfer from other Homes.....	114	
		1,059
Loss:		
By transfer to other Homes.....	163	
By discharge.....	379	
By dishonorable discharge.....	15	
By dropped from rolls.....	134	
By death.....	138	
By transfer to Government insane asylum.....	35	
		864
Net gain.....		195

The average number of officers and members present and absent during the year was 3,169 (an increase of 444 over the preceding year), of whom 2,365 were present and 804 were absent. The greatest number present during the year was 2,705, on January 20, 1903; the lowest number was 2,027, on July 18, 1902. An average of 15 were temporarily cared for. The whole number cared for during the year was 4,073—an increase of 314 over the previous year.

The average age of the members of this Branch was reported as 62.99 years.

A census of the camp taken October 19, 1903, showed 2,434 officers and members present; 812 absent; total, 3,246. At that date there were 272 vacant beds in barracks and 14 in hospital. Two members were in confinement. There had been a net gain of 15 members since June 30, 1903.

Discipline. Discipline is fairly good, the principal offenses committed during the year being drunkenness, bringing intoxicating liquors into the grounds, disorderly conduct in quarters or on the grounds, and absence without leave. The total number of members reported as offending was 544, or 23 per cent of the average present. The total number of arrests was 758; of trials, 298.

Clothing. On June 30, 1903, there was clothing on hand for issue to the amount of \$10,892.43; issued to members, \$54,336.87; awaiting condemnation, \$3,810.41. Clothing that cost \$20,143.73 was condemned during the year.

It appears from the laundry records at this Branch that in winter nearly all the members wear the Home shirts, and less than half of them wear the Home socks, while in summer only about two-thirds wear the Home shirts, and less than one-third the Home socks.

Food. The food, as well as the arrangements for cooking and serving it, were satisfactory in every respect. The average number of persons employed is 31 in the kitchen and 70 in the dining hall. It is estimated that 76,556 pounds of swill and garbage are produced monthly, which are sold under contract to the highest bidder, \$837.24 being realized therefrom during the year.

The cost was not reported of either the subsistence or the hospital ration.

Hospital. The hospital was in a very satisfactory condition, except the basement, which, in parts, was not up to standard. It has a capacity for 200 patients, and, in orderly arranged annex rooms, quarters for 150 convalescents.

It is suggested that if a band stand were erected in the vicinity of the hospital, where semiweekly concerts could be given, the diversion would be enjoyed by the patients. The facilities for bathing are ample, consisting of 1 bath tub to each ward, and 11 bath tubs for extra-duty men and the medical staff. The daily average of sick was 263—168 in hospital, 59 in convalescent companies, and 36 in barracks. The principal diseases were: Rheumatism, malarial fevers, diarrhea, organic heart disease, pulmonary tuberculosis, cystitis, and hemiplegia. The total number of patients cared for during the year was 1,061, of whom 112 died in hospital, 26 elsewhere. The average age at death was 64.50 years, a lower average age than at any other Branch. The death rate per 1,000 present and absent was 33.80, which is much smaller than at any other Branch. Thirty-four members were sent to insane asylums during the year. The average number of employees was 100 members, 17 civilians, and 8 female nurses, their cost for the year being \$17,899.71. The amount expended for drugs during the year was \$3,456.05; for appliances, \$473.12.

The number of members buried in the Home cemetery during the year was 86, the total number buried there being 262. The total capacity of the cemetery is 2,112 graves.

Fifty acres are under cultivation as a farm, but there is no garden for vegetables. No cows are kept. The price of milk per gallon, by the quantity, in the nearest town, ranges from 14 to 20 cents. The value of the farm stock on hand June 30, 1903, was \$1,000. The average number of farm employees is 47—44 members and 3 civilians.

No farm or garden products were turned into the commissary. The value of the 57,448 pounds of hay fed to stock and the 30,748 sold was not reported.

Cost of maintaining farm, lawn, and flower garden	\$5,782.27
Cost of maintaining transportation and teams	2,708.60
Total	8,490.87

The appropriation for farm for the year was \$11,250.

The protection against fire consists of the city water, two chemical engines, fire extinguishers, hand grenades, fire buckets, hose, and hose reels. The apparatus is tested monthly. The fire organization consists of the civilian employees of the engineer department, members of the band, and guards and members as an auxiliary force. During the year a slight fire, occasioned by a defective flue, occurred in the lodge at the north gate; loss, \$10.

The water supply is obtained from the Danville city waterworks, and there is a gravity system of sewers. The steam plant consists of 12 120-horsepower boilers, which is used for heating, cooking, power, and pumping. It cost \$80,000, and was maintained during the past year at an expense of \$35,090.40. There is no lighting plant, but 3,351 incandescent lights are furnished by the Danville Electric Lighting Company, the cost of which was not reported. There is no ice plant, but ice is purchased at \$1 a ton, being much higher than it costs at any other Branch.

Fifteen men are employed in the laundry, which cost for the year \$3,511.32 for labor and materials.

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The facilities for religious services consist of both Protestant and Catholic chapels. The duties assigned to the chaplains consist of religious services, funerals, visiting the sick, and the general spiritual welfare of the members.

During the year the expenses for performances given in the theater amounted to \$2,110. Members of the Home are not charged for admission, but others pay 5 and 10 cents, and the receipts from this source for the year amounted to \$33.60.

At the close of the fiscal year the library contained 1,092 volumes, all of which had been received during the year. Twenty-two newspapers and 68 periodicals are subscribed for; none are furnished free. During the year 3,212 books were read or circulated.

The band consists of 24 civilians, at a cost for the year, including the subsistence and other allowances of its members, of \$9,776.30.

The accounts and disbursements pertaining to the several funds were examined from August 23, 1902, the date of the last inspection, to October 15, 1903, and may be summarized as follows:

Designation.	General fund.	Pension fund.	Post fund.	Total.
Balance due last inspection	\$40,371.56	\$3,080.46	\$7,723.49	\$51,175.51
By transfers from officers	402,478.23	449,541.98		852,020.21
From sales	6,766.75		50,005.50	56,772.25
From collections	897.36	40.60		937.96
Currency from checks	102,390.11	275,153.39	13,676.26	391,219.76
Currency redeposited	7,664.11	40.60	49,604.73	57,309.44
Canceled checks	92.08	96.00		188.08
Total to be accounted for	560,660.20	727,953.03	121,009.98	1,409,623.21
Expended per vouchers	371,153.75	370,249.43	49,297.35	790,700.53
Transferred to officers	14,236.78	262.50		14,499.28
Checks for currency	102,390.11	275,153.39	13,676.26	391,219.76
Currency redeposited	7,664.11	40.60	49,604.73	57,309.44
Total accounted for	495,444.75	645,705.92	112,578.34	1,253,729.01
Balance	65,215.45	82,247.11	8,431.64	155,894.20
Total	560,660.20	727,953.03	121,009.98	1,409,623.21

The above amounts were on deposit with the Indiana National Bank, of Indianapolis, except \$406.12 cash on hand under the post fund.

The receipts and expenditures under the general fund for the fiscal year ending June 30, 1903, amounted to \$313,383.70, and \$295,649.19, respectively. Of the total receipts all was by transfer except \$6,705.47 from sales and other sources. On posthumous accounts \$928.63 was received, and \$697.44 disbursed.

During the year the daily average number of employees under the general fund was 448, the exact number authorized, as against 436 for the preceding year—an increase of 12. The amount paid them was \$84,987.51, as against \$76,668.05 for the previous year—an increase of \$8,319.46. A daily average of 28 worked without pay as waiters and scullions.

The average per capita cost for maintenance at this Branch for the fiscal year 1903 was \$132.29, as against \$171.40 for the preceding year, a decrease of \$39.11. This was a large decrease. The lowest per capita expense at any of the Branches for this year was \$132.29.

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Pension fund. There were 2,917 pensioners on the rolls, their pensions ranging from \$6 to \$30 a month. During the year the pensions paid to members aggregated \$356,325.17.

Post fund. The receipts and expenditures under the post fund for the fiscal year were: Receipts, \$43,254.45, of which \$41,728 was from sales; expenditures, \$41,687.20, of which \$23,400.81 was for stock. The net gain for the year was reported as \$5,267.63. The average daily number of employees under this fund was 44, and for the fiscal year they were paid \$11,500.83.

Local depository, etc. The need of a local depository is very much felt at this Branch. The authorized depository is at Indianapolis, about 70 miles distant, so the treasurer is obliged to hold the accumulations from his daily receipts and deposit them about once a month. This condition requires him at times to have a large amount of cash on hand.

The sum of \$71.67 is reported as stolen from the beer hall cash box, but the sum has been allowed the treasurer by the president of the Board of Managers.

The returns for perishable property show the following as to flour expended and bread fabricated during the months noted:

	Flour.	Bread.
1903.		
July.....	25, 244	38, 528
May.....	27, 244	38, 823
August.....	27, 908	35, 886
September.....	28, 714	42, 050
June.....	80, 968	38, 909

The shop accounts are kept by the noncommissioned officers in charge from data furnished by the shop foreman, who, though good workmen, are poor clerks. The amount of flour reported on hand in the bake shop seems to be largely in excess of its current needs—running as high as 7,098 pounds, June, 1903.

NO. 9.—REPORT OF AN INSPECTION OF THE MOUNTAIN BRANCH, MADE OCTOBER 27, 1903.

Col. Walter P. Brownlow, Jonesboro, Tenn., whose term of office expires in 1908, is the local manager of this Branch, the official post-office address of which is "National Military Home, Washington County, Tenn." It is about 3 miles from Johnson City, with which it is connected by a trolley line.

This Home had just been opened for membership a few days before the inspection, and the members (43 in number at the time of inspection) were located in a couple of wards of the hospital, which was not yet completed, and in which work was still in progress. Things were in an unsettled condition owing to this fact. The men were in the way of the workmen, and the consequence is that when the hospital is completed it will have to be renovated.

There is a great deal of work to be done in the way of new construction. There are two barracks nearing completion, and others at various stages of construction. The power plant is about completed.

The buildings at this Branch are very imposing in appearance, and the construction by the contractors gives evidence of good workmanship.

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The location of the Home is sightly and attractive, and in the course of years, with the liberal aid of the Government, it can, and possibly will be, made a very beautiful place.

The governor, Col. John B. Smith, takes great interest in the upbuilding of the institution and is giving it his undivided attention. The local manager, Colonel Brownlow, is deeply interested and is giving a great deal of time to pushing the construction to a sufficient state of completion to receive members at the earliest possible date.

There is an impression among the old soldiers at the various Homes in the Middle States that Johnson City is a cure-all for rheumatism and most other aches and pains. A conversation with the surgeon led me to believe that this is a mistake. In fact, the surgeon reports the climatic conditions there are anything but favorable to the amelioration of rheumatism and catarrhal troubles.

The accounts and disbursements pertaining to the general fund were examined from May 25, 1903, to October 24, 1903 (this being the first inspection of money accounts at this Branch), and the transactions may be summarized as follows:

Received by transfers from officers.....	\$26,694.75	
Received from sales.....	25.00	
Currency redeposited.....	25.00	
	<hr/>	
Total to be accounted for.....		\$26,744.75
Expended per vouchers.....	10,278.35	
Transferred to officers.....	365.04	
Currency redeposited.....	25.00	
	<hr/>	
Total accounted for.....		10,668.39
		<hr/>
Balance.....		16,076.36

The above balance was deposited in the National Bank of Bristol, Tenn.

At the date of inspection this Branch had no pension fund, as members had only just begun to arrive.

The post fund consists of \$5,500 loaned to it from the post fund of the Central Branch, by resolution of the Board of Managers at their meeting in September, 1903, with the proviso that the said loan is to be repaid within two years.

No. 10.—GENERAL DEPOT.

Connected with the Central Branch is the general depot, under the supervision of Mrs. E. L. Miller, who for many years has conducted it with marked ability. In this depot blank forms, bedding, uniform clothing, and underwear are manufactured for the use of the various Branches of the National Home for Disabled Volunteer Soldiers.

All articles of clothing, such as hats, caps, shoes, wool shirts, stockings, and all blankets, bedsteads, crockery and tableware, and paper for blanks and envelopes are purchased by the general treasurer and sent to this depot, whence, after repacking them, they are distributed to the several Branches. The general treasurer also purchases the material from which the other parts of the uniform are made, and for sheets, pillowcases, and towels. The cost of these articles is charged to the appropriations of the Branches by a system of proportion, without any reference to the actual value of the articles sent to the Branch.

The basement, second floor, and attic of the depot building are used

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for storing and manufacturing; the cellar under Company No. 19 is used for storing crockery; bedsteads are stored in the cellar under Companies Nos. 15 and 29, and in the basement under the Stone Chapel; and mattresses are finished and stored in a room on the second floor of the laundry building.

The average number of salaried employees during the year was 45—42 members and 3 civilians—whose aggregate salaries for the year amounted to \$12,003.59. The average number employed on piecework was 185—42 members and 143 civilians—and their pay amounted to \$41,766.33.

The pay rolls are made up by a clerk at the general depot and forwarded to the New York office on the 25th of each month; the vouchers are made up by clerks in the treasurer's office at the Central Branch, and forwarded to the New York office on the 25th of each month; both pay rolls and vouchers are paid by the general treasurer, through the treasurer at the Central Branch.

Maj. Moses Harris, the general treasurer, makes contracts and purchases, but the contracts must be approved by the president of the Board of Managers. Office supplies, repairs to machinery, oil, hoop-iron, nails, etc., are purchased in open market. The goods purchased are inspected by the superintendent of the general depot on their arrival; the articles fabricated there are inspected by the foreman of the tailoring department.

The total receipts from the sale of clippings during the year amounted to \$2,180.54. No clothing or other articles were sold to State Homes or elsewhere.

The following was the cost of material furnished for fabrication in each of the depot shops and of the articles fabricated therein, to wit:

Tailor shop, \$101,254.96; underwear and bedding shop, \$15,630.38; knitting shop, \$598.71; suspender shop, \$1,812.73; printing office, \$2,340.13. Fabricated articles: tailor shop, \$142,568.93; underwear and bedding shop, \$24,367.64; knitting shop, \$912.43; suspender shop, \$2,078.06; printing office, \$3,330.28.

The amount paid for services in each was: Tailor shop, \$43,035.26; underwear and bedding shop, \$9,196.51; knitting shop, \$313.72; suspender shop, \$265.33; printing office, \$959.10.

The following tabulations give a more detailed account of the various transactions at the general depot during the year, to wit:

Rates paid for each class of piecework, fiscal year ending June 30, 1903.

Articles.	To mem- bers.	To civil- iana.
Aprons, denim and white.....each.....		\$0.04
Blouses.....do.....	\$0.35	.50
Caps, white.....do.....		.05
Coats, dress and great.....do.....	.75	1.00
Drawers, canton flannel and red flannel.....per pair.....		.15
Gowns, hospital.....do.....		.50
Jackets, white.....do.....		.30
Mattresses:		
Barrack (tufting and finishing).....do.....	.05	
Hospital (tufting and finishing).....do.....	.07	
Overalls.....per pair.....		.10
Pad covers.....each.....		.04
Pillow cases.....do.....		.02
Sheets.....do.....		.08
Shirts, cotton and red flannel.....do.....		.25
Socks.....per dozen pairs.....	.60	
Towels, bath, hand, and roller.....each.....		.02
Trousers.....per pair.....	.30	.35
Vests.....each.....	.45	.50

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Statement of machines, tools, etc., on hand July 1, 1902, purchased and expended during the year, and remaining on hand June 30, 1903.

HEAD OF CURRENT EXPENSE.

Articles.	July 1, 1902.	Purchased.	Expended.	June 30, 1903.
Balance on hand	\$2,286.20			\$2,286.20
Casting rollers		\$27.97	\$27.97	
Nickel type		6.25		6.25
Pins, gauge .....		.60	.60	
Rule, brass		3.00		3.00
Type		39.74	39.74	
Total	2,286.20	77.56	68.31	2,295.45
Less appraisement				576.14
Actual value on hand June 30, 1903.				1,719.31

HEAD OF CLOTHING.

Balance on hand	\$3,653.85			\$3,653.85
Binding, linoleum		\$4.35		4.35
Linoleum		41.25		41.25
Machines, sewing		224.00		224.00
Machine, sponging		1,375.00		1,375.00
Needles, sewing-machine		1.06	\$1.05	
Renewal of battery		26.20	26.20	
Repairs to engine		23.00	23.00	
Repairs to button-hole machine .....		.60	.60	
Sharpening shears		20.60	20.60	
Table top		42.50		42.50
Total	3,653.85	1,758.55	71.45	5,340.95
Less condemned articles				1,760.21
Actual value on hand June 30, 1903.				3,580.74

HEAD OF HOUSEHOLD.

Balance on hand	\$137.79			\$137.79
Brushes, stencil		\$0.90		.90
Stencils		1.35		1.35
Total	137.79	2.25		140.04
Less condemned articles				14.29
Actual value on hand June 30, 1903.				125.75

HEAD OF HOSPITAL.

Balance on hand	\$11.21			\$11.21
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Statement of office furniture on hand July 1, 1902, purchased and expended during the year and remaining on hand June 30, 1903.

HEAD OF MISCELLANEOUS.

	On hand July 1, 1902.	On hand June 30, 1903.
Balance on hand	\$123.13	\$123.13

332 NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS. .

Statement of material and articles on hand July 1, 1902, purchased, expended, fabricated, and transferred during the year, and remaining on hand June 30, 1903.

HEAD OF CURRENT EXPENSE.

Articles.	On hand July 1, 1902.		Purchased.		Fabricated.	
	Number.	Value.	Number.	Value.	Number.	Value.
Blank forms	101,744	\$504.94	2,000	\$25.90	313,529	\$1,409.34
Books	378	404.57	1,207	2,945.56		
Envelopes	206,720	595.67	524,775	1,251.73	499,825	1,562.75
Paper:						
Reams	107,446	440.59	578	2,197.84		
Sheets	65,820	134.22			749,050	1,301.04
Cardboard and cards	5,867	25.97	42,000	99.40		
Miscellaneous	80,842	164.34	25,000	101.40	122,853	279.10
Sundry expenses				126.44		
Total		2,270.30		6,748.27		4,552.23

Articles.	Expended.		Transferred.		On hand June 30, 1903.	
	Number.	Value.	Number.	Value.	Number.	Value.
Blank forms			342,502	\$1,574.85	74,771	\$365.33
Books			1,127	2,711.17	458	638.96
Envelopes	499,825	\$1,312.35	503,300	1,540.71	228,195	557.09
Paper:						
Reams	500,446	1,897.18			117,446	741.25
Sheets			800,020	1,402.24	14,918	33.02
Cardboard and cards	26,866	76.25			21,001	49.12
Miscellaneous	1,077	6.46	143,259	365.42	34,359	179.26
Sundry expenses		126.44				
Total		3,418.68		7,594.39		2,557.78

HEAD OF SUBSISTENCE.

Articles.	On hand July 1, 1902.		Purchased.		Fabricated.	
	Amount.	Value.	Amount.	Value.	Amount.	Value.
Aprons:						
Denim	22	\$4.10			2,165	\$403.36
White	99	17.01			3,039	522.11
Caps, white	348	34.56			300	29.79
Denim			4,095.4	\$416.50		
Duck, cotton	10	1.05	6,605.2	684.95		
Jackets, white	993	603.35			379	230.27
Muslin, bleached			6,623.6	559.71		
Total		660.07		1,661.16		1,185.53

Articles.	Expended.		Transferred.		On hand June 30, 1903.		Value as per appraisal.
	Amount.	Value.	Amount.	Value.	Amount.	Value.	
Aprons:							
Denim			1,160	\$216.13	1,027	\$191.33	\$202.52
White			1,970	338.46	1,168	200.66	205.80
Caps, white			275	27.31	373	37.04	36.74
Denim	2,729.4	\$276.76			1,366	139.74	139.74
Duck, cotton	991	102.78			5,624.2	583.22	583.22
Jackets, white			876	582.25	496	301.37	308.46
Muslin, bleached	3,845.6	324.97			2,778	234.74	234.74
Total		704.51		1,114.15		1,688.10	1,711.22

From "Head of clothing," 251.6 yards; value, \$23.29.

Statement of material and articles on hand July 1, 1902, purchased, expended, fabricated, and transferred during the year, and remaining on hand June 30, 1903—Continued.

HEAD OF CLOTHING.

Articles.	On hand, July 1, 1902.		Purchased.		Fabricated.		Expended.		Transferred.		On hand June 30, 1903.	
	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value as per appraisement.
Binding.....gross.	15	\$5.58		\$23.98			37	\$17.57			22	\$11.99
Blouses.....number.	20,879	42,225.68	44		15,648	\$31,646.50			15,433	\$31,333.02	21,034	42,539.16
Buckles.....do.												
Suspender, double gross.	29	55.25	110	202.40			101	187.73			38	69.92
Vest.....gross.	110	9.35	55	6.20			117	10.62			48	4.93
Buckram.....yards.	11,412	641.92	8,874.2	222.77			11,043	623.34			4,213.2	241.35
Buttons.....do.												
Coat.....gross.	255	879.28	928	2,084.60			751	1,849.20			432	1,114.59
Drawers.....dozen.	4,675	58.44	2,016	26.88			5,777	73.13			914	12.19
Flannel.....do.	416	10.61	660	23.10			1,079	24.37			267	9.34
Shirt.....dozen.	637	1.84	2,160	6.15			1,418	4.07			1,379	3.92
Suspender.....gross.	1,050	29.93	768	32.64			1,844	43.06			474	19.51
Vest.....do.	195	253.87	1,201	1,344.62			1,089	1,125.24			307	473.25
Canvas, French.....yards.	3,642	400.13	3,700	418.25			5,418	595.49			1,924	222.89
Cloth.....do.	4,130	5,451.66	17,126	26,031.52			11,478	16,620.62			9,778	14,862.56
D. B., 20-ounce.....do.	2,608	2,947.04	6,650.1	8,113.16			5,941	7,013.30			3,317.1	4,046.90
D. B., 16-ounce.....do.		36.70	39.4	183.31			35.4	119.80			14.7	50.21
White.....do.	10.7											
Coats.....number.	1,047	4,158.27			7,378	29,302.46			6,014	23,885.20	2,471	9,575.53
Dress.....do.	25	99.31			2,678	10,637.54			2,564	10,184.70	139	552.15
Great.....do.	3,748	346.69	3,300	337.59			3,044.6	290.48			4,003.2	394.80
Denim.....yards.												
Drawers.....do.	15,046	5,843.66			34,434	13,329.41			28,000	10,438.80	21,530	8,334.27
Canton flannel.....pairs.	755	716.80			82	30.38			72	68.36	711	675.02
Red flannel.....do.												
Drill.....do.												
Black.....yards.	2,033	132.14	1,682	92.51			2,462	154.03			1,253	70.62
Unbleached.....do.	37,686	1,929.53	28,000	1,407.20			45,734	2,354.02			19,952	1,042.71
Flannel.....do.												
Canton.....do.	40,316	3,197.22	56,320	4,466.16			83,513	6,622.57			13,125	1,040.81
Coat lining.....do.	11,989	2,576.43	17,710.2	4,356.72			20,139	4,581.94			9,140.2	2,346.91
D. B., 11-ounce.....do.	17,717	12,401.94	10,967.4	7,581.38			25,304	17,636.97	20	4.30	3,400.4	2,846.35
Red.....do.	5,934	80.46					12,588	37.28			6,599	43.18
Interlining.....do.	5,987	89.81	13,200	163.68			17,154.6	171.68			81.84	81.84
Jeana, Kentucky.....do.	20,527	1,672.95	7,731.6	626.29			23,481	1,911.47			4,777.6	387.77
Kersey, S. B., 20-ounce.....do.	10,965	10,307.16	47,643	48,595.89			40,953	40,894.92			17,653	18,008.13

^b Condemned.

^a To head of subsistence, 251.6 yards; value, \$23.29.

Statement of material and articles on hand July 1, 1902, purchased, expended, fabricated, and transferred during the year, and remaining on hand June 30, 1903—Continued.

HEAD OF CLOTHING—Continued.

Articles.	On hand July 1, 1902.		Purchased.		Fabricated.		Expended.		Transferred.		On hand June 30, 1903.	
	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value as per appraisement.
Overalls.....pairs.....	320	\$137.92			902	\$388.78			884	\$359.49	388	\$171.22
Paper, carbonized.....rolls.....	8	35.60	20	\$98.00			8	\$35.60			20	98.00
Shirting, 4-4 cotton.....yards.....	5,419	348.44	10,000	681.00			7,122	464.50	74	4.95	8,223	559.99
Shirts:												
Cotton.....number.....	488	240.00			2,413	1,186.72			2,300	1,131.15	601	296.57
Domest flannel.....do.....	1,620	2,385.61							48	70.68	1,572	2,314.93
Red flannel.....do.....	508	591.87			12	13.98			72	83.88	445	511.75
Silesia:												
Black.....yards.....	10,793	755.51	3,850.4	273.39							3,411.4	240.71
Slate.....do.....	12,158	1,118.55	7,703.2	635.52			11,232	788.19	10	.92	5,247.2	444.31
Silk, twist.....pounds.....	186	307.02	55	350.90			14,604	1,308.84			45	254.63
Socks.....pairs.....	3,780	692.50			5,202	952.99	95.4	400.99	8,982	1,645.49		
Straps, suspender, double pairs.....	8,720	102.31	13,200	335.28								
Stripes, white.....pairs.....					379	119.80						
Suspenders.....do.....	6,490	927.94			14,391	2,060.78			379	119.80	7,320	1,067.01
Tape.....dozen.....	137	21.56	460	64.40			448	64.73	42	6.25	107	14.98
Thread:												
Black cotton.....do.....	1,788	797.90	1,650	736.31			2,527	1,127.67	115	51.32	796	355.22
White cotton, O. N. T., dozen.....	600	267.75	880	392.70			889	396.70	170	75.87	421	187.88
White cotton.....dozen.....	185	77.05	110	48.95			186	78.51			109	47.49
Linen.....do.....	563	410.99	440	324.50			586	428.80	87	63.64	380	243.05
Linen.....pounds.....	134	167.50	55	68.75			127	158.75			62	77.50
Trousers.....pairs.....	13,778	22,904.55			27,579	45,847.32			29,850	49,622.63	11,507	20,206.29
Vests.....number.....	12,518	15,393.38			17,224	21,180.36			16,388	18,961.18	14,404	17,904.17
Wedding.....dozen.....	502	332.15	840	224.00			966	252.91			356	94.98
Webbing.....yards.....	6,643	1,078.00	22,000	1,078.00			24,419	1,203.18			4,224	206.97
Wigan.....do.....	3,303	155.90	2,212	108.26			4,325	206.53			1,189	58.58
Yarn:												
Blue wool.....pounds.....	990	387.15					990	387.15				
White wool.....do.....	516	211.56					516	211.56				
Beeswax and sponges.....				15.45				15.45				
Boxes, shipping.....				387.50				387.50				
Chalk, tailor.....				13.50				13.50				
Cloth, oil.....				1.45				1.45				
Express charges.....				5.10				5.10				

Gasoline and oil.....	8.85			8.85		
Iron and nails.....	110.32			110.32		
Matches, soap, etc.....	6.96			6.96		
Paint, stencil.....	1.00			1.00		
Paper:						
Pattern.....	8.12			8.12		
Wrapping.....	52.08			52.08		
Potash, caustic.....	2.50			2.50		
Tags, shipping.....	.75			.75		
Twine.....	2.35			2.35		
Total.....	112,308.89	145,454.20	156,097.02	111,448.20	150,354.43	154,082.84

HEAD OF HOUSEHOLD.

[illegible]

HEAD OF HOSPITAL.

[illegible]

a Condemned.

Statement of material and articles on hand July 1, 1902, purchased, expended, fabricated, and transferred during the year, and remaining on hand June 30, 1903—Continued.

HEAD OF HOSPITAL—Continued.

Articles.	On hand, July 1, 1902.		Purchased.		Fabricated.		Expended.		Transferred.		On hand June 30, 1903.	
	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value.	Amount.	Value as per appraisement.
Sheeting:												
4-4 cotton.....yards..			4,000	\$272.40							4,000	\$272.40
7-4 cotton.....do.....			12,004	1,568.92							12,004	1,568.92
Sheets.....number..	5,503	\$2,244.12									2,153	877.99
Ticking.....yards..	90	12.55					3,350	\$1,366.13			90	12.55
Towels:												
Bath.....number..	1,288	255.67									783	146.48
Hand.....do.....	1,600	288.48			960	\$161.09					860	144.31
Roller.....do.....	453	187.22			1,011	417.85					774	319.89
Total.....		13,767.42		2,583.25		1,306.99		\$884.32		4,423.59		12,354.77

NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS. 337

Statement of office supplies, etc., purchased and expended during the year.

HEAD OF MISCELLANEOUS.

Articles.	Purchased.	Expended.
Books, blank	\$48.00	\$48.00
Ice, etc.	99.97	99.97
Office supplies	18.96	18.96
Telegrams .....	.93	.93
Telephone service	16.50	16.50
Tickets, car	15.00	15.00
Total	199.35	199.35

Estimated cost of the material and of the fabrication of each article.

Articles.	Material.	Cutting and making.	Total.
Aprons:			
Denim	\$0.1353	\$0.0619	\$0.1972
White, subsistence .....	.1143	.0619	.1762
Blouses	1.3338	.6199	2.0137
Caps, white, subsistence and hospital .....	.0228	.0757	.0985
Coats:			
Dress	3.0371	1.0554	4.0925
Great	3.0656	1.0069	4.0725
Drawers:			
Canton flannel .....	.1921	.1902	.3823
Red flannel .....	.8622	.1902	1.0524
Gowns, hospital .....	.8958	.5465	1.4423
Jackets, white, subsistence and hospital .....	.2714	.3505	.6219
Mattresses, household	3.6397	.1254	3.7651
Overalls .....	.2932	.1481	.4413
Pillowcases, household .....	.0774	.0419	.1193
Shirts:			
Cotton .....	.1955	.2933	.4888
Red flannel .....	.8667	.2933	1.1600
Socks .....	.1151	.0603	.1754
Stripes, white .....	.3161		.3161
Suspenders .....	.1250	.0194	.1444
Towels:			
Bath, household .....	.0967	.0419	.1386
Hand, household .....	.0767	.0419	.1186
Roller, household .....	.2296	.0419	.2715
Hand, hospital .....	.1248	.0419	.1667
Roller, hospital .....	.3694	.0419	.4113
Trousers	1.2859	.4701	1.7560
Vests .....	.6229	.6201	1.2430

Statement of amount and value of fabricated articles transferred to the several Branches, National Home for Disabled Volunteer Soldiers, during fiscal year ending June 30, 1903.

HEAD OF CURRENT EXPENSE.

Branch.	Blank forms.		Envelopes.		Paper.		Miscellaneous.	
	Num-ber.	Value.	Num-ber.	Value.	Num-ber.	Value.	Num-ber.	Value.
Northwestern	29,751	\$139.65	39,250	\$97.61	65,380	\$116.47		
Southern	52,481	253.56	54,075	171.67	113,380	199.45		
Eastern	27,032	123.46	49,900	163.62	64,600	113.36		
Western	37,042	183.79	57,700	185.62	93,100	163.54		
Central	49,370	208.81	81,050	235.03	209,240	354.10		
Pacific	39,709	184.30	59,500	134.94	86,140	154.64		
Marion	33,253	155.22	63,300	177.09	94,900	170.46		
Danville	32,212	129.74	47,250	121.18	66,100	117.97		
Mountain	22,123	79.89	10,500	39.18	2,200	3.80	1,300	\$4.89
General treasurer	322,973	1,458.33	462,525	1,325.94	795,040	1,393.79	1,300	4.89
	17,393	96.20	38,075	206.03	4,980	8.45	121,553	274.21
Total	340,366	1,553.53	500,600	1,531.97	800,020	1,402.24	122,853	279.10

Statement of amount and value of fabricated articles transferred to the several Branches, National Home for Disabled Volunteer Soldiers, during the fiscal year ending June 30, 1903.

HEAD OF SUBSISTENCE.

Articles.	Central.		Northwestern.		Eastern.		Southern.		Western.		Pacific.		Marion.		Danville.	
	Am't.	Value.	Am't.	Value.	Am't.	Value.	Am't.	Value.	Am't.	Value.	Am't.	Value.	Am't.	Value.	Am't.	Value.
Aprons:																
Denim.....number.....			75	\$13.97			420	\$73.25	300	\$65.99	100	\$18.63	170	\$31.68		
White.....do.....	500	\$65.90	75	12.89	250	42.96	480	82.46	200	34.36	220	37.80	245	42.10		
Cape white.....do.....	150	14.90									126	12.41				
Jackets, white.....do.....	25	15.19	100	60.76	207	125.77	208	126.38	20	12.15	60	36.46	256	155.54		
Total.....		115.99		87.62		186.43		287.09		102.40		105.30		229.32		

HEAD OF CLOTHING.

Blouses.....number.....	2,816	\$5,695.07	2,015	\$4,075.14	945	\$1,911.17	1,596	\$3,227.75	2,545	\$4,742.53	2,023	\$4,091.31	2,405	\$4,863.86	1,348	\$2,726.19
Coats:																
Dress.....do.....	1,160	4,607.05	677	2,688.78	600	2,392.95	682	2,708.63	960	3,812.74	475	1,886.51	720	2,859.55	740	2,988.99
Great.....do.....	700	2,780.54	119	472.68	215	854.02	181	718.97	110	486.94	21	88.41	278	1,104.27	940	3,783.87
Dresses.....do.....																
Cotton flannel pairs.....	5,625	2,177.44	3,323	1,286.32	2,940	1,138.08	2,945	1,140.01	3,300	1,277.44	3,230	1,250.38	3,100	1,200.01	3,537	1,869.17
Red flannel.....do.....																
Overalls.....do.....	225	96.99	135	58.19	10	4.31			270	116.38	70	30.17	66	32.64	5	5.70
Shirts:																
Cotton.....number.....	390	191.80	60	29.50	310	152.46	578	284.26	140	68.86	212	104.27	510	250.82	100	49.18
Donet flannel.....do.....			46	70.68												
Red flannel.....do.....																
Socks.....pairs.....	4,800	873.36	108	19.79	114	20.88	1,960	382.73	108	19.79	1,092	200.06	56	76.39	6	6.99
Stripes, white.....do.....	245	77.36	84	10.61	30	9.45	60	19.00	40	18.97	18	13.22	72	13.19	708	129.70
do.....do.....	2,640	373.09	1,572	225.11	1,930	197.82	1,549	221.67	1,404	201.07	1,597	218.55	72	21.36	150	12.08
do.....do.....	6,210	10,323.51	3,231	5,371.21	2,451	4,074.54	3,448	5,723.95	3,836	5,127.61	3,002	6,652.92	3,845	6,408.54	1,764	2,924.31
do.....do.....	2,685	3,311.06	1,962	2,412.68	1,675	2,068.74	1,937	2,381.98	1,740	2,186.69	2,079	2,556.56	1,708	2,086.64	2,972	4,840.65
Vests.....number.....																
Total.....		30,451.42		16,720.99		12,805.22		16,788.60		18,961.99		17,069.42		19,238.47		18,098.87

HEAD OF HOUSEHOLD.

Mattresses.....number.....	2,200	\$276.32	1,400	\$175.84	110	\$462.90	250	\$1,052.05	100	\$345.00	50	\$210.41	185	\$2,204.41	120	\$504.96
Pillowcases.....do.....	2,200	1.98	1,400	472.94	1,200	150.72	2,000	251.20	2,700	539.12	1,780	223.56	1,800	163.28	1,550	194.66
Sheets.....do.....	2,200	1.30	1,300	472.94	1,984	721.78	100	36.38	800	291.04	50	18.19	1,550	200.09	600	218.26
Towels.....do.....	2,250	303.98	500	67.55	150	20.27	500	67.55	100	13.51			600	81.06	750	101.83
Bath.....do.....	2,250	29.18	250	29.18	100	11.68	100	11.67	100	11.67			300	35.01		
Hand.....do.....	1,500	396.46	450	118.94	50	13.22	1,628	430.28			75	19.82	650	171.80	300	79.29
Roller.....do.....																
Total.....		1,005.94		864.45		1,380.57		1,849.13		1,040.34		471.98		2,859.65		1,098.56

HEAD OF HOSPITAL.

Aprons white.....number.....	125	\$21.48	125	\$21.48	100	\$17.19	20	\$3.44	100	\$17.18	120	\$20.62	120	\$22.17		
Caps, white.....do.....	20	1.98			50	130.00			50	75.00	84	8.83				
Gowns.....do.....	100	150.00			65	39.50			60	36.46	120	72.92				
Jeckets, white.....do.....	50	238.42	85	51.64	40	238.74							72	429.72		
Mattresses.....do.....	1,500	178.05	600	71.22	800	94.96	1,113	132.11	700	83.09	640	71.22	450	53.43	400	\$47.48
Pillowcases.....do.....	1,100	448.58	450	183.51	200	81.56	1,350	142.73	200	81.56	340	203.90	250	101.95	300	122.94
Sheets.....do.....																
Towels.....do.....	100	19.85	100	19.85			150	29.78					150	29.78	50	9.93
Bath.....do.....	950	159.41	300	50.34	100	16.78	250	41.95			50	8.89			50	8.89
Hand.....do.....	200	82.66	200	82.66	50	20.67	200	82.66			40	16.53				
Roller.....do.....																
Total.....		1,360.43		490.70		629.40		482.67		248.29		401.91		637.05		188.14

840 NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS.

Number and value of manufactured articles received in general depot during the year ending June 30, 1903.

HEAD OF CURRENT EXPENSE.

Articles.	No.	Value.
Transportation tickets	25,000	\$101.40
Blank forms	2,000	25.90
Books	1,207	2,945.56
Total		3,072.86

Statement of manufactured articles on hand July 1, 1902, purchased, expended, and transferred during the year, and remaining on hand June 30, 1903.

HEAD OF SUBSISTENCE.

Articles.	On hand July 1, 1902.		Purchased.		Expended.		Transferred.		On hand June 30, 1903.	
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.
Bottles:										
Pepper	813	\$40.65	200	\$10.00			825	\$41.25	188	\$9.40
Salt			600	75.00			600	75.00		
Vinegar	306	76.50	1,191	297.75			1,075	268.75	422	105.50
Bowls	54,162	4,261.31					24,650	1,875.76	29,512	2,385.55
Cups	1,494	47.31	1,000	31.67			1,163	36.83	1,331	42.15
Dishes, vegetable	3,511	766.57	9,544	2,274.66			7,701	1,765.20	5,354	1,276.08
Forks, table	14,892	2,352.34					948	149.75	13,944	2,202.59
Knives, table	7,132	1,259.99					1,644	290.44	5,488	969.55
Ladles, soup	5	2.79	200	110.00			102	56.14	103	56.65
Pitchers, sirup	256	160.00	500	312.50			400	250.01	356	222.49
Plates:										
Butter and cheese			2,499	102.04					2,499	102.04
Bread	10,940	521.28					1,380	65.75	9,560	455.53
Butter, individual	9,085	140.51					3,000	43.88	6,085	96.63
Butter, 6-inch	8,353	309.40					3,150	114.29	5,203	195.11
Cheese	9,498	359.02					1,532	57.91	7,966	301.11
Dinner	48,257	2,975.85	4,987	307.53			17,750	1,094.69	35,494	2,188.79
Soup	7,927	469.28	19,720	1,314.67			10,150	627.56	17,497	1,156.39
Pots, mustard	1,184	72.04					449	27.33	735	44.71
Platters, meat	6,178	1,761.28					1,599	415.74	4,579	1,345.54
Salt cellars	632	39.50					213	13.32	419	26.18
Saucers	852	26.98	1,997	63.23			1,206	38.19	1,643	52.02
Spoons:										
Dessert	17,448	3,698.98					852	180.63	16,596	3,518.35
Tea	5,304	677.11					204	25.05	5,100	651.06
Tureens, soup	18	66.15	200	840.00			76	309.75	142	596.40
Crates				13.85		\$13.85				
Straw				9.75		9.75				
Total		20,084.81		5,762.65		23.60		7,824.12		17,999.77

NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS. 341

Statement of manufactured articles on hand July 1, 1902, purchased and transferred during the year, and remaining on hand June 30, 1903.

HEAD OF CLOTHING.

Articles.	On hand July 1, 1902.		Purchased.		Transferred.		On hand June 30, 1903.	
	Amt.	Value.	Amt.	Value.	Amt.	Value.	Amt.	Value.
Caps, uniform.....number..	11,853	\$4,115.76	3,958	\$1,266.56	5,750	\$1,972.62	10,061	\$3,409.70
Gloves, white.....pairs..	34,348	4,049.03			1,464	172.59	32,884	3,876.44
Hats:								
Black.....number..	1,578	1,109.44			1,062	746.61	516	362.83
Drab.....do.....	10,514	6,698.44	27,439	18,521.32	15,813	10,397.26	22,140	14,817.50
Shoes.....do.....	17	25.50			10	15.00	7	10.50
Shirts, K. W.....do.....	44,515	20,474.06	40,304	16,484.33	35,041	15,803.40	49,778	21,154.99
Shoes.....pairs..	32,834	43,992.88	15,400	20,482.00	25,038	33,519.83	23,196	30,955.06
Shouldertraps:								
Captain.....do.....	44	99.68	200	452.30	113	255.75	131	296.23
Lieutenant.....do.....	33	62.70	50	95.00	55	104.50	28	53.20
Slippers.....do.....	1,682	936.71	600	324.00	853	471.93	1,429	798.78
Stockings.....do.....	34,152	7,642.97	121,018	28,799.75	61,753	13,935.68	93,417	22,507.04
Total.....		89,202.17		86,425.26		77,395.17		98,232.26

HEAD OF HOUSEHOLD.

Bedsteads.....number..	1,250	\$5,695.00	1,000	\$4,500.00	709	\$3,217.48	1,541	\$6,977.62
Blankets, G. W.....do.....	4,337	10,855.16	2,000	4,940.00	3,758	9,386.28	2,579	6,408.98
Counterpanes, linen.....number..	1,657	1,274.74	4,083	3,122.26	2,592	1,988.32	3,148	2,408.68
Pillows.....do.....	2,195	2,548.80	1,000	1,180.00	1,338	1,560.72	1,857	2,168.06
Total.....		20,373.70		13,742.26		16,152.80		17,968.16

HEAD OF HOSPITAL.

Bedsteads.....number..	652	\$2,811.99			132	\$569.29	520	\$2,242.70
Blankets, W. W.....do.....	2,215	6,215.77			125	350.78	2,090	5,864.99
Counterpanes, cotton.....number..	3,062	2,315.38			389	294.14	2,673	2,021.24
Pans, bed.....do.....	509	235.01					509	235.01
Pillows.....do.....	1,270	1,484.22			121	141.42	1,149	1,342.80
Total.....		13,062.37				1,355.63		11,706.74

Statement of amount and value of manufactured articles transferred to the several branches, National Home for Disabled Volunteer Soldiers, during fiscal year ending June 30, 1903.

HEAD OF CURRENT EXPENSE.

Branches.	Blank forms.		Books.		Transportation tickets.		Envelopes.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
Northwestern.....	276	\$2.95	134	\$351.10	400	\$1.61		
Southern.....	100	1.30	190	350.17	2,100	8.51		
Eastern.....	50	.54	136	261.42	5,200	21.08		
Western.....	500	5.04	141	321.17				
Central.....	550	5.08	147	401.33	6,000	24.31		
Pacific.....	235	2.23	82	282.73	1,000	4.06		
Marion.....	150	1.33	101	242.69	4,000	16.22		
Danville.....	275	2.85	132	243.56				
Mountain.....			58	237.04				
General treasurer.....	2,136	21.32	1,121	2,691.21	18,700	75.82		
			6	19.96	1,706	10.50	2,700	\$3.74
Total.....	2,136	21.32	1,127	2,711.17	20,406	86.32	2,700	8.74

Statement of amount and value of manufactured articles transferred to the several Branches, National Home for Disabled Volunteer Soldiers, during the fiscal year ending June 30, 1903.

HEAD OF SUBSISTENCE.

Articles.	Central.		Northwestern.		Eastern.		Southern.		Western.		Pacific.		Marion.		Danville.	
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.
Bottles:																
Pepper.....	225	\$11.25	75	\$3.75	60	\$3.00	168	\$8.40	100	\$5.00	61	\$3.05	100	\$5.00	36	\$1.80
Salt.....	120	15.00	120	15.00					120	15.00			120	15.00	120	15.00
Vinegar.....	275	68.75	75	18.75					300	75.00	61	15.25	160	40.00	12	3.00
Bowls.....	5,700	433.20	5,000	380.00	1,100	83.50	2,250	172.39	1,000	76.00	6,000	456.00	1,800	137.77	1,800	136.80
Cups.....	25	.79	200	6.33	84	2.66	84	2.66	1,400	12.67	20	.63	310	9.82	40	1.27
Dishes, vegetable.....	1,250	251.72	450	102.26	400	91.33	1,600	345.50	1,100	250.17	900	212.50	800	183.67	1,300	297.83
Forks, table.....	504	79.61									300	47.39	144	22.75		
Knives, table.....	708	125.08									504	89.04	432	76.32		
Ladle, soup.....											36	19.80				
Pitchers, sirup.....	105	65.63			25	15.63	68	42.50					130	81.25	66	36.34
Plates:															72	45.00
Bread.....					50	2.38	320	15.25			300	14.29	460	21.92	250	11.91
Butter, individual.....	1,100	89.90	400	14.55					8,000	43.88						
Butter, 6-inch.....					250	9.36					100	3.75	1,100	39.68	200	7.05
Cheese.....	100	3.78			100	3.78							450	17.01	550	20.79
Dinner.....	3,500	215.84	2,100	123.50	1,600	98.66	3,200	197.33	2,000	123.34	2,600	160.84	1,250	77.08	1,500	92.50
Soup.....	1,100	68.02	1,350	81.66	900	55.50	1,600	100.52			3,500	218.90			1,700	102.96
Pots, mustard.....	56	3.35	25	1.52	48	2.92	96	5.84	100	6.09	25	1.52	100	6.09		
Platters, meat.....			50	13.00	175	45.50	414	107.64	300	78.00	220	57.20	390	101.40	50	13.00
Salt cellars.....	45	2.81					48	3.00	100	6.25	20	1.26				
Sauces.....	200	6.34	50	1.58	86	2.72	180	5.70	400	12.67			235	7.44	55	1.74
Spoons:																
Dessert.....	456	96.67									204	43.25				
Tea.....							192	40.71							36	4.60
Tureens, soup.....	10	42.00					72	9.20							66	267.75
Total.....		1,559.74		767.90		417.14		1,117.19		704.07		1,344.07		854.45		1,059.34

General treasurer, samples, \$0.22.

HEAD OF CLOTHING.

Articles.	Central.		Northwestern.		Eastern.		Southern.		Western.		Pacific.		Marion.		Danville.	
	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.
Caps, uniform.....	905	\$309.46	655	\$226.31	60	\$20.74	1,098	\$375.31	630	\$216.13	208	\$71.04	1,473	\$506.85	720	\$246.43
Gloves, white.....	144	16.96	96	11.32	96	11.32	262	29.69					348	41.03	523	62.26
Hats.....																
Black.....	257	190.68	94	66.08	128	89.98	50	35.15	132	92.80			267	187.71	134	94.21
Drab.....	3,723	2,440.13	1,775	1,166.58	1,532	1,008.85	900	635.80	1,062	691.83	2,544	1,683.08	2,352	1,550.84	1,860	1,235.60

Sashes.....do.....	2	3.00	3.00	2	3.00	2	3.00	4	6.00	2,820	2,820.00	2,820.00	2,401.26
Shirts, knit wool.....do.....	5,970	2,686.54	1,821.96	8,946	2,176.64	4,025	1,890.77	2,920	1,274.66	3,766	8,686.60	8,686.60	6,112.41
Shoes.....pairs.....do.....	4,824	6,457.78	3,161.63	3,115	4,168.51	2,664	3,568.71	3,766	5,029.68	3,766	5,029.68	5,029.68	83.64
Slippers.....do.....				364	200.92	78	43.06	50	27.60				
Shoulder straps:													
Captain.....do.....	5	11.33	22.63	8	18.10	18	40.75	30	67.90	30	40.74	24	54.30
Lieutenant.....do.....			15.20	8	15.20			20	38.00	9	17.10	10	19.00
Stockings.....do.....	9,624	2,179.85	1,801.44	5,904	1,384.90	7,320	1,650.09	6,816	1,526.37	6,816	1,526.37	9,896	2,182.66
Total.....		14,284.75	8,303.65	6,911.79	8,993.42	8,186.18	9,046.67	10,234.23	11,441.56				

General treasurer, samples, \$2.93.

HEAD OF HOUSEHOLD.

Bedsteads.....	228	\$1,032.36	500	\$1,251.46	50	\$125.15	50	\$227.90	415	\$1,884.42	10	\$72.90
Blankets, gray wool.....	250	\$421.24	200	\$153.44	50	\$153.44	100	\$308.80	1,040	\$2,614.64	1,907	\$4,821.77
Counterpanes, linen.....	200	\$153.44	200	\$153.44	50	\$153.44	237	\$362.83	525	\$402.83	129	\$101.24
Pillows.....	450	\$234.12	200	\$234.12	150	\$175.13			346	\$403.81	191	\$223.00
Total.....		1,298.82	1,641.18	1,251.46	722.15	657.79	5,305.40	4,917.01				

General treasurer, samples, \$4.43.

HEAD OF HOSPITAL.

Bedsteads.....	20	\$86.26	12	\$51.75	50	\$215.64	50	\$215.64	50	\$215.64	50	\$215.64
Blankets, white wool.....			25	70.16	100	\$280.62	20	16.12	20	16.12		
Counterpanes, cotton.....	100	\$75.62	49	\$37.04	100	\$75.62	96	112.20	96	112.20		
Pillows.....			25	29.22								
Total.....		75.62	37.04	206.22	197.63	280.62	342.96	215.64				

344 NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS.

Average quantity of goods used in the manufacture of each article of bedding, clothing, etc.

Articles.	Amount.	Articles.	Amount.
Aprons, denim:		Pillowcases, household:	
Denim.....yards..	1.2607	Sheeting, 4-4 cotton.....yards..	1.1141
Tape.....dozen..	.0859	Shirts, cotton:	
Aprons, white:		Shirting, 4-4 cotton.....do....	2.9615
Muslin, bleached.....yards..	1.2655	Buttons.....dozen..	$\frac{1}{4}$
Tape.....dozen..	.0359	Shirts, red flannel:	
Blouses:		Flannel, red.....yards..	3.5000
Flannel, d. b., 11-ounce.....yards..	1.6171	Buttons.....dozen..	$\frac{1}{4}$
Drill, unbleached.....do....	1.0146	Socks:	
Jeans, Kentucky.....do....	1.5006	Yarn, blue wool.....pounds..	.1865
Wigan.....do....	.2765	Yarn, white wool.....do....	.0992
Buttons, coat.....dozen..	$\frac{1}{2}$	Stripes:	
Caps, white:		Cloth, white.....yards..	.0922
Duck, cotton.....yards..	.2000	Suspenders:	
Coats, dress:		Webbing.....do....	1.6968
Cloth, d. b. 20-ounce.....yards..	1.5557	Binding.....gross..	.0026
Canvas, French.....do....	.5137	Buckles.....dozen..	$\frac{1}{2}$
Drill, unbleached.....do....	1.5732	Double-pair straps.....do....	1
Flannel, coat lining.....do....	1.9299	Towels, bath, household:	
Interlining.....do....	1.2606	Crash, unbleached.....yards..	1.2654
Silesia.....do....	.0435	Towels, hand, household:	
Wadding.....dozen..	.0882	Crash, unbleached.....do....	1.0000
Buttons, coat.....do....	$\frac{1}{2}$	Towels, roller, household:	
Buttons, vest.....do....	$\frac{1}{2}$	Crash, unbleached.....do....	3.0171
Coats, great:		Towels, hand, hospital:	
Kersey, s. b. 20-ounce.....yards..	2.3237	Crash, bleached.....do....	1.0135
Canvas, French.....do....	.6080	Towels, roller, hospital:	
Drill, unbleached.....do....	1.5045	Crash, bleached.....do....	3.0119
Flannel, coat lining.....do....	2.2031	Trousers:	
Interlining.....do....	1.2274	Kersey, s. b., 20-ounce.....do....	1.2568
Wadding.....dozen..	.1252	Drill, black.....do....	.0893
Buttons, coat.....do....	$\frac{1}{2}$	Drill, unbleached.....do....	.5157
Drawers, canton flannel:		Buttons, fly.....dozen..	$\frac{1}{2}$
Flannel, canton.....yards..	2.4224	Buttons, suspender.....do....	$\frac{1}{4}$
Tape.....dozen..	.0077	Vests:	
Buttons.....do....	$\frac{1}{2}$	Cloth, d. b., 16-ounce.....yards..	.3449
Drawers, red flannel:		Buckram.....do....	.6411
Flannel, red.....yards..	3.5234	Silesia, black.....do....	.6334
Tape.....dozen..	.0077	Silesia, slate.....do....	.8479
Buttons.....do....	$\frac{1}{2}$	Buckles.....dozen..	$\frac{1}{4}$
Gowns, hospital:		Buttons, vest.....do....	$\frac{1}{2}$
Homespun, n. e.....yards..	6.9694	The following old materials were	
Buttons.....dozen..	$\frac{1}{2}$	used in the fabrication of the follow-	
Hooks and eyes.....do....	$\frac{1}{4}$	ing articles:	
Jackets, white:		Coats, great:	
Duck, cotton.....yards..	2.4578	Buttons, coat.....gross..	84 $\frac{1}{2}$
Mattresses:		Overalls:	
Filling, cotton.....yards..	1	Buckles, vest.....do....	6 $\frac{1}{2}$
Ticking.....yards..	4.4540	Buttons, suspender.....do....	48 $\frac{1}{2}$
Overalls:		Trousers:	
Denim.....yards..	3.0965	Buttons, suspender.....do....	3 $\frac{1}{2}$
Buckles.....dozen..	$\frac{1}{4}$	Vests:	
Buttons, fly.....do....	$\frac{1}{2}$	Buckles, vest.....do....	2 $\frac{1}{2}$
Buttons, suspender.....do....	$\frac{1}{4}$	Buttons, vest.....do....	72 $\frac{1}{2}$

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